Lake County Clean Water Program
Management Council
Thursday 3-4:30 pm February 6, 2019
Conference Room B, Lake County Courthouse
255 N Forbes St., Lakeport, CA 95453
REMOTE access – via Zoom https://zoom.us/j/353153987
Call in +1(669)900-6833 Meeting ID 353 153 987

Meeting Minutes – DRAFT FOR APPROVAL

1. Welcome & Attendance
2. Introduction & Introductions
   a. Management Council
   b. Appoint Chair & Vice Chair
      i. Chair- Mireya Turner & Vice Chair- Joyce Overton (Motion- Bruno Sabatier/
         Second- Scott De Leon)
3. Background and History
   a. MS4 Boundaries (Phase II)
      i. Lakeport takes photos in Fall and Spring to compare for trash assessments
   b. Agreement
   c. Bylaws
      i. Keep them functional and flexible
      ii. Meeting dates and times should be within the agreement
         1. Designated first day of the quarter?
         2. At least one meeting in Clearlake per annual meeting schedule
         3. 3 months in between each meeting
         4. Exact days for the next year are provided in the ppt and reviewed later
            in the agenda
      iii. Remote call is acceptable for quorum attendance
      iv. Define quorums
         1. At least four people in attendance to be able to take action
         2. Motion- Mireya Turner & Second- Bonne Sharp
      v. Alternates (same voting rights as primaries)
         1. City of Clearlake- Russ Cramer
         2. City of Lakeport- George Spurr
vi. Non-Quarterly meeting requirements
   1. As needed
   2. Emergency

vii. Preference on sharing information-
   1. Email
   2. Calendar invites

4. Workgroups
   a. There will different people reporting to the committee
   b. Want the public to interact
   c. Action Item- EAIP discussions in MC- no workgroup for this

5. Roles & Responsibilities
   a. State
      i. SMARTS and permit communications
   b. Management Council
      i. Review ordinances (Betsy Cawn identified this as an important role)
         1. Requirements & Priorities
         2. Identifying modifications to ordinances
         3. Review existing permit
            a. Big Requirements?
         4. Outdated items – that need immediate attention
      ii. Public/ Educational Outreach
   c. Workgroups
      i. There are coordinators for each workgroup
      ii. Workgroups will present their own strategic plan

6. 2020 Scheduling
   a. Management Council Meetings
      i. May 7, 2020 from 3:00 to 5:00
      ii. August 6, 2020 from 3:00 to 5:00
         1. Send out reports and attachments to review before this date
      iii. November 5, 2020 from 3:00 to 5:00
         1. Motion- Bruno Sabatier & Second- Joyce Overton
   b. Other Special Dates
i. State reporting is due October 15, 2020

7. Public Comment
   a. Terre Logsdon - Workgroups appointed by council?
      i. Internal Agency and Public recruitment for workgroups
   b. Action Item - Send out MS4 Annual Report and any other needed reports
      i. Betsy would like a paper copy
      ii. Angela Clarified that anyone that needs a digital or paper copy of materials can contact her and she will send it out Angela.depalma-dow@lakecountyca.gov

8. Adjourn
   a. Motion - Bruno Sabatier & Second - Joyce Overton

Some additional important links:
Lake County Clean Water Program Website

Lake County Clean Water Program Documents & Links

Lakeport Clear Water Program Page
https://www.cityoflakeport.com/community_development/lake_county_clean_water_program.php
COUNTY OF LAKE CLEAN WATER PROGRAM MANAGEMENT COUNCIL BYLAWS

Article I. Name

The name of this body shall be the Lake County Clean Water Program “Management Council,” which includes the three regional co-permittees as described in the [WHAT TITLE?] 2019 agreement between the County of Lake, City of Lakeport, and City of Clearlake, and the Lake County Watershed Protection District (herein referred to as the “PARTIES”).

Article II. Definitions

[COMMENT: The items in the list should be alphabetized by their first initials, drop the itemized list by sequential letters that do not match the first initial in the title, please (leave off the capital letters as item labels).

Within the bylaws and associated agreement, the following terms are defined as follows:

A. “Board” - the Board of Supervisors for the County of Lake, which serves as the ex officio Board of Directors for the Lake County Watershed Protection District.

B. “Council” - the Lake County Clean Water Program Management Council.

C. “City Council” - either of the elected bodies of the City of Clearlake or the City of Lakeport.

D. “Co-Permittees” - the municipal governments of the City of Clearlake, City of Lakeport and County of Lake for compliance with the regional permit issued by the California State Water Quality Control Board, implementing the US EPA’s “National Pollutant Discharge Elimination System’s” Municipal Separate Storm Sewer System (MS4) stormwater management program.

E. “Work Groups” - subgroups comprised of agencies, organizations, and public members to assist co-permittees with implementation of the state’s defined “Minimum Control Measures” (Pre- and Post-Construction Erosion Control, Municipal Good Housekeeping, Illicit Discharge Detection & Elimination, Public Education & Outreach, and Public Involvement & Participation). deriving plans, policies, and activities to meet compliance for any of the components of the current MS4 permit.

F. “PEO” / “PIP” - Public Education & Outreach and Public Involvement & Participation programs deliver information products for engagement of members of the public to assist in the implementation of the Lake County Stormwater Management Plan, as required by the state’s regional MS4 permit. As two of the six “Minimum Control Measures,” the PEO/PIP information work products are created by all three municipalities with coordination support from the Watershed Protection District.

G. “IDDE” - Illicit Discharge Detection & Elimination program monitors public health and sanitation facilities (food preparation licensees, municipal and private sewer systems, and storm drainages within specified MS4 boundaries). One of the six “Minimum Control Measures,” this program is implemented by the municipal Departments of Public Health, Public Works, Public Services, and Law Enforcement with the purpose of detecting and eliminating illicit discharges into the MS4 drainage system.

H. “CON/PCON” - Pre-Construction and Post-Construction Erosion Control for all new development or redevelopment projects. One of the six “Minimum Control Measures,” this program is implemented by the municipal Departments of Community Development and Public Works to
prevent water quality impacts from permitted land use projects within incorporated or unincorporated jurisdictional boundaries.

I. “MUNI”- Municipal Good Housekeeping for stormdrain system maintenance and pollution prevention (also see “IDDE”). One of the six “Minimum Control Measures,” this program is implemented by the municipal Departments of Public Works, Utility Districts, and the Lake County Special Districts Administration.

J. “TMDL”- Total Maximum Daily Load is the desired target value for restriction of nutrient loading in the “receiving water body” (i.e., Clear Lake) which is delivered through annual stormwater runoff from all land-based sources in the Upper Cache Creek Basin, including the federal and state land managers, CalTrans, and the regional co-permittees. Stormwater runoff delivers nutrient-rich sediments that nourish the production of natural aquatic species of fresh water alage, and the target value is measured by volume of Chlorophyll a (XX micrograms per liter is the maximum target goal), as one of the lake’s monitored water quality constituents.

K. “Waste Load Allocation” - each of the land-owner agencies with responsibility for achieving the “TMDL” nutrient loading restriction must not exceed its Waste Load Allocation, determined by the percentage of stormwater runoff each responsible agency contributes to the “receiving water body” (Clear Lake).

L. “PEAILP”- Program Effectiveness Assessment and Improvement Plan workgroup coordinated by the Watershed Protection District, providing the annual evaluation of permit requirements and implementation of “Minimum Control Measures” by all of the regional co-permitees.

M. “TRASH” - Trash management program for compliance with defined MS4 management milestones demonstrating progress towards 100 percent compliance with the State Water Quality Control Board amendment added to the current MS4 regional permit issued June 1, 2017). The state’s General Permits for Stormwater Discharges Associated With Industrial and Construction Activities will contain the prohibition of trash in storm water and non-storm water discharges when those permits are reissued. (Also see “IDDE” and “MUNI” definitions.)

N. “Best Management Practices” (BMPs) - Includes schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent, eliminate, or reduce the pollution of the receiving waters. BMPs also include treatment requirements, operating procedures, and practices to control [plant] site runoff of spillage, leaks, sludge or wastewater, or seepage from raw material storage. BMPs are defined methods and process tools for implementing the “Minimum Control Measures.”

O. “Discharge” - A release of stormwater or any other substance from any controllable outlet to the “receiving water body.”

P. “US EPA” - United States Environmental Protection Agency.

Q. “Non-Stormwater Discharge” - Any discharge from MS4 stormwater drainage systems to the “receiving water body” that is not composed entirely of stormwater.

R. “NPDES” - The US EPA’s National Pollutant Discharge Elimination System regulating identifiable “point” sources of pollutant discharges into “Waters of the United States.” It was created in 1972 by the Clean Water Act and authorizes state governments to perform many permitting, administrative, and enforcement aspects of the program (reference Lake County Stormwater Management Plan and Stormwater Management Ordinance No. ________).

S. “Stormwater” - Defined as annual rainfall and snowmelt runoff consisting only of those allowable discharges originating from precipitation events. Stormwater is that portion of
Increased non-point pollution sources that flows from the MS4 storm drain system (or from “non-point” sources external to the defined MS4 boundaries) to enter the “receiving water body” (Clear Lake).

T. “Storm drain” - A storm drain is a closed conduit that conveys storm water (from precipitation) that has been collected by inlets to an outfall. It generally consists of laterals or leads, and trunk lines or mains. Culverts connected to the storm drainage system are considered part of the system. [SEE SEPARATE QUESTION -- THIS IS INCOMPLETE.]

U. Storm drain system / Storm system / storm sewage system - A storm drain is defined as that portion of the storm drainage system that receives runoff from the inlets and conveys the runoff to some point when it is then discharges into a channel, waterbody or piped system. It consists of one or more pipes connecting one or more inlets. A storm drain may be a closed-conduit, open-conduit, or some combination of the two. The terminology “storm sewer” which has been in general use for many years, is gradually being replaced with the term “storm drain” or “storm sewer drain” or “stormwater system” to differentiate between sanitary sewers and storm drains. Stormwater will be used throughout this bylaw document and related agreement.

V. Culvert - A culvert is closed conduit whose purpose is to convey surface water under a roadway, railroad, or other impediment. It may have one or two inlets connected to it to convey drainage from the median area.

W. Inlet / outlet

X. Urban runoff - Stormwater from city streets and adjacent domestic or commercial properties that carries pollutants of various kinds into the separate storm sewer systems and the “receiving water body” (Clear Lake).

Y. Maybe to save space and time, we can refer to the Lake County Storm Water Ordinance Chapter 26 list of definitions, and then ones that aren’t included in there, and specific to the Management Council and Agreement, we include in this list?

Use the US EPA’s NPDES definitions. Add any additional Terms as needed

Article III. Purpose and Goals

Purpose

The purpose of this Bylaw is to guide the process and function of the Lake County Clean Water Program Management Council. The Council’s responsibility is to provide recommendations to the County Board(s) and City Councils on the required management actions or funding for implementation of the Lake County Stormwater Management Plan to comply with the federal Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) and the State’s General Municipal Stormwater Permit (Phase II). The Stormwater Management Plan is designed to meet the requirements of the regional Municipal Separate Storm Sewer System (MS4) Permit, providing the County and both incorporated Cities with the authority to regulate discharges to the receiving water body (Clear Lake) from point and non-point sources of annual rainfall runoff to protect surface water bodies and groundwater basins. Increased stormwater pollutants associated with construction sites and other developed land uses are
major causes of impairment of water quality and flow in lakes, ponds, streams, rivers, wetlands and groundwater.

Goals.

The Management Council, with research and information provided by the respective workgroups (Article VIII), will identify funding sources, mechanisms, opportunities, and pathways that will be used to support the implementation of the Lake County Storm Water Management Plan and compliance with the State Water Resources Control Board’s Water Quality Order issued to the regional co-permittees (County of Lake and both incorporated Cities).

The overall mission of the Management Council is to oversee and manage the Advisory Committee of the implementation of the Lake County Clean Water Program by coordinating the operations of the Clean Water Program workgroups implementing the “Minimum Control Measures” and other MS4 permit compliance projects. The Management Council evaluates proposed “Minimum Control Measure” workgroup recommended actions and work products for compliance with the approved permit requirements.

The Council will promote the Clean Water Program by providing recommendations for the County Board and City Councils that will be used to manage, support, and implement the current Lake County Stormwater Management Plan. Through coordination of workgroups (defined above) that provide program compliance information and implementation work products, including the Program Effectiveness Assessment and Improvement Plan evaluations of ongoing implementation tasks, the Council ensures co-permittee compliance with the regional stormwater management permit sections.

Each workgroup is responsible for developing a plan that includes:

1. Proposing actions to meet specified permit requirement sections.
2. Establishing priorities for existing or new work products addressing all identified problems.
3. Identifying department/organization work teams that should coordinate efforts to implement the “Minimum Control Measures” and other permit requirement sections congruent with the Lake County Stormwater Management Plan.
4. Drafting and presenting to the County Board(s) and City Councils Best Management Practices and Program/Project requirements for implementing the Lake County Stormwater Management Plan.
5. Promoting and supporting the importance of reducing stormwater runoff impacts to surface water quality in the “receiving water body” (Clear Lake).
6. Developing and maintaining good communications with the Board(s) and Councils via quarterly implementation project and permit compliance status reports.

Article. IV. Members

Section 1. Number. The Program Management Council shall consist of 7 members as follows: One designated representative from each Party; one representative from the District; and a Stormwater Program Coordinator from each Party. One alternative representative may be appointed by each Party and District.
Section 2. Appointment and removal. Initial members of the Program Management Council shall be appointed by the Clean Water Program Advisory Committee. Future members and/or members to fill vacancies of the Program Management Council shall be appointed by the Program Management Council. The Program Management Council shall have the right to remove Committee members for good cause shown after notice and a hearing before the Program Management Council as a whole. A two-thirds (2/3) majority is required for removal. Automatic removal results in a calendar year. Recommendations for membership will be accepted from any source.

Section 3. Term. Program Management Council members shall serve for staggered three (3) year terms. This does not preclude any member from being reappointed.

Section 4. Compensation. All members of the Program Management Council shall serve without compensation.

Section 5. Voting. Each member or his/her alternate shall be entitled to one vote on each matter submitted to a vote of the Program Management Council. Members shall nominate alternates to the Program Management Council for consideration and vote.

Section 6. Staff members. Staff and coordination will be provided by the health department.

Section 7. Volunteer status. Program Management Council members and alternates serve on a volunteer basis to the County of Lake Clean Water Program.

Article V. Meetings

Section 1. Regular Meetings. Regular meetings of the Program Management Council shall be held on a quarterly or as-needed basis.

Section 2. Special Meetings. Special meetings of the Program Management Council may be held on call of the Clean Water Program, the Chairperson of the Program Management Council, or by any three (3) members of the Program Management Council.

Section 3. Notice of Meeting. Written notice stating the date and hour of each meeting shall be delivered or mailed to each member not less than five days before each meeting. Announcement of meetings will be made through the local and social media.

Section 4. Quorum. A quorum for the purpose of holding a meeting shall consist of not less than six (6) Committee members.

Section 5. Manner of Acting. A quorum present, the act of a majority of the members present shall constitute the action of the entire Program Management Council, except as may be otherwise provided in these Bylaws.


Article VI. Officers

The officers of the Program Management Council shall consist of the following and such other officers as the Program Management Council may from time to time designate and appoint:

a) Chairperson
b) Vice-Chairperson

c) Recording Secretary

d) Treasurer / Financial coordinator

The Chairperson shall preside at all meetings of the Program Management Council. In the absence of the Chairperson, the Vice-Chairperson shall preside. The Recording Secretary shall supervise and present minutes at each meeting.

Do we have to describe how we decide these positions in the bylaws?

**Article VI. Committees**

Section 1. Subcommittees may be appointed specializing in concerns relative to the County of Lake Clean Water Program as per the agreement with the State Water Board.

Section 2. The Advisory Committee shall report to/meet with the Program Management Council periodically to report Committee efforts to the Program Management Council and to plan development/revision status.

**Article VII. Work Groups**

Work Groups serve the capacity of subcommittees and may be appointed as needed to accomplish specific short-term objectives pertaining to each of the MS4 permit components and additional workgroups may be designed and formed based on Program needs (i.e. Funding workgroup). Workgroups pertaining to MS4 components and their associated workgroup designation, in parenthesis, include:

1) Public Education & Outreach (PEO)
2) Public Involvement & Participation (PIP)
3) Illegal Discharge Detection & Elimination (IDDE)
4) (Pre-)Construction site stormwater runoff control (CON)
5) Post-Construction site stormwater runoff control (PCON)
6) Municipal Good Housekeeping (MUNI)
7) Total Maximum Daily Loads (TMDL) [WHAT IS THE “WORKGROUP” FOR THIS? IT’S JUST ANOTHER PERMIT SECTION REQUIREMENT!]
8) Program Effectiveness, Assessment & Improvement Plan (PEAIP)
9) 

**Article VIII. Books and Records**

The Management Council shall keep minutes of all proceedings of Management Council meetings and such other books and records as may be required for the proper conduct of its business and affairs as specified in the Clean Water Program Co-Permittee Agreement (2019). The County of Lake representative will coordinate the Management Council, be responsible for summarizing meeting notes and for posting the agendas and meeting notes on the County’s Clean Water Program Webpage.

[“representative”?]
The Management Council will identify the required funding and allocations to the approved program budget necessary for implementation of the Lake County Stormwater Management Plan and MS4 permit requirement compliance tasks, in collaboration with the co-permittees and defined workgroups, to provide:

Production of Management Council meeting materials including agendas, minutes, program or project records, workgroup reports, internal and external inter-agency correspondence.

1. Production and distribution of Public Education & Outreach materials throughout the incorporated and unincorporated population centers in the County of Lake.
2. Collection of MS4 permit compliance reports for evaluation by the Program Effectiveness, Assessment & Improvement Plan (PEAIP) workgroup.
3. Permit Application development. [WHAT IS THIS?]
4. Contracting with governmental and non-governmental agencies and organizations for water quality sampling and other BMP implementation tasks.
5. Development of projects necessary to meet the Stormwater Management Plan permit implementation requirements.
6. Integration of Watershed Protection District services for disaster mitigation programs and projects identified in Local Hazard Mitigation Plans, Community Wildfire Protection Plans, Area Plans, and state/federal natural resource management plans.
7. What other items should we cost share on? Or do we want this to remain open and be a task for the MC. [ANNUAL REPORT PRODUCTION FOR PEO/PIP workgroup development of required information, education, and public engagement work products.]

Article X. Amendments

These Bylaws may be amended at any regular or special meeting of the Program Management Council. Written notice of the proposed Bylaw change shall be emailed or hard copy delivered to each member at least five (5) days prior to the date of the meeting. The Co-Permittees must approve changes in the Bylaws. Bylaw changes require a two-thirds (2/3) majority vote of the Program Management Council members present.
August 17, 2020

Ms. Angela De Palma-Dow
County of Lake
Department of Water Resources
255 N. Forbes Street, Room 309
Lakeport, CA 95453

Subject: Proposal to Assist Lake County Clean Water Program with Phase II NPDES Permit Compliance

Dear Ms. De Palma-Dow:

Per your request, EOA, Inc. (EOA) is pleased to submit this proposal to assist the Lake County Clean Water Program (LCCWP) with compliance with the National Pollutant Discharge Elimination system (NPDES) General Permit for Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (Phase II Permit; Order 2013-0001-DWQ) that was adopted by the State Water Resources Control Board on February 5, 2013. It is our understanding that many provisions of the Phase II Permit are addressed on a regional basis through the LCCWP which is a joint effort between Co-Permittees: the County of Lake (County), the City of Clearlake (Clearlake) and the City Lakeport (Lakeport).

During our meetings on March 6, April 8, and July 1, 2020, you identified three priority tasks: Program Effectiveness Assessment and Improvement, Development of BMP Effectiveness Calculator, and Miscellaneous On-call Services. Our proposed approaches to assist with these tasks are described in the sections below.

Introduction to EOA

EOA is a multi-disciplinary environmental consulting firm providing a broad range of environmental and engineering client services. EOA specializes in assisting public agencies with stormwater NPDES permits and the development and implementation of stormwater management and water quality monitoring programs. EOA provides technical and regulatory support to Phase I countywide municipal stormwater programs in the San Francisco Bay Area (Marin, Santa Clara, San Mateo, Alameda, Contra Costa, and Solano Counties) and numerous smaller Phase I and Phase 2 municipal programs throughout California (Town of Windsor, Cities of Redding, Morgan Hill, Gilroy).

EOA has a long track record in effectively assisting the LCCWP in stormwater management. Beginning in 2003, EOA assisted the County in developing the LCCWP. Between 2003 and 2007, EOA assisted the County with the implementation of the Program, including the development of the initial LCCWP Program Agreement and the first Stormwater Management Plan, coordination of the Advisory Committee and other work groups, development of guidance on best management practices (BMPs), construction of public education and outreach materials, and development of annual reports. EOA also provided assistance on the Total Maximum Daily Load (TMDL) program for Clear Lake, conducted trainings for agency staff on construction and post-construction BMPs, and developed tracking materials for the illicit discharge detection and elimination program.
Scope of Work

EOA will perform the following tasks:

**TASK 1: Program Effectiveness Assessment and Improvement**

**Task 1a: Develop Program Effectiveness Assessment and Improvement Plan**

EOA will develop a Regional Program Effectiveness Assessment and Improvement Plan (PEAIP) for the LCCWP that is consistent with the requirements in Provision E.14 of the Phase II Permit. In developing the PEAIP, EOA will follow guidance provided by the California Stormwater Quality Association (CASQA) in the document, *A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs* (Guidance Document), dated February 2015. The PEAIP format will be modeled on CASQA’s Phase II PEAIP Framework for Traditional MS4s, dated April 2015.

A PEAIP supports stormwater program goals to reduce potential impacts of pollution on receiving waters by providing a framework for the implementation and assessment of Best Management Practices (BMPs) focused on high priority Pollutants of Concern (POCs). It provides a feedback loop for the adaptive management of the stormwater program. During implementation of the PEAIP, data are collected and assessed. If warranted, the stormwater program can adjust management actions to achieve desired goals. For example, pre- and post-training surveys are conducted to discern knowledge and awareness (i.e., data collection). If knowledge is lacking, the training program can be modified (i.e., adaptive management).

The Phase II Permit required that a PEAIP be developed and submitted with the Year 2 Annual Report on October 15, 2015. Each year, data was to be collected and summarized in Annual PEAIP Implementation Reports. The Year 5 Annual Report (October 15, 2018) would have provided an overall analysis of the data and would have recommended program modifications. The LCCWP was unable to develop or implement a PEAIP due to major fires and floods that drained local resources. Although it is now Year 7 of the Phase II Permit, a PEAIP can still provide valuable information for LCCWP. Furthermore, it is likely that the next revision of the Phase II Permit will require a new PEAIP or continued implementation of the existing PEAIP.

Developing the PEAIP will require learning more about the details of the Lake County Clean Water Program. EOA will obtain these details through questionnaires and meetings (conference calls) with County, Lakeport, and Clearlake staff and review of Phase II Permit Annual Reports and other materials provided by the County.

**Task 1b: Program Effectiveness Assessment**

Using the framework in the PEAIP that will be developed in Task 1a, EOA will conduct a Program Effectiveness Assessment. Data collection and assessment may include review of public and staff survey responses, tabulation of staff trainings and outreach events, and review of BMP inventories. EOA will identify and summarize potential BMP and/or program modifications to reduce the potential impacts of stormwater runoff. Results will be described in a Program Effectiveness Assessment Report.

**Assumptions:**

- Two priority pollutants of concern will be identified in the PEAIP: sediment and nutrients (phosphorus).
- Co-Permittee staff with knowledge about various aspects of the stormwater program will be available for up to four two-hour conference calls.
Co-Permittee staff will provide details on existing program activities, including data on outreach activities implemented (e.g., number of school assemblies performed, number of articles published, etc.), inventory of BMPs, data on staff trainings, results of public and staff knowledge/awareness surveys, and other relevant data needs.

Co-Permittee staff will provide timely responses to questions submitted via email.

**Schedule:**

- **Task 1a - PEAIP:** Assuming that the contract is executed by September 18, EOA will provide a draft PEAIP to LCCWP staff for review by November 6, 2020. Comments on the draft PEAIP should be returned to EOA by November 20, 2020. Comments from the Co-Permittees will be compiled into a single package. The PEAIP will be finalized by January 4, 2021, after one round of comments and review. It is assumed that the Assessment (Task 1b) may inform the PEAIP; therefore, the final report deadlines are synced.

- **Task 1b - Program Effectiveness Assessment:** EOA will provide a draft Program Effectiveness Assessment Report to County staff for review by December 4, 2020. It is assumed that comments on the PEAIP will inform the Effectiveness Assessment. Comments on the draft should be returned to EOA by December 18, 2021. Comments from the Co-Permittees will be compiled into a single package. The Program Effectiveness Assessment Report will be finalized by January 4, 2021, after one round of comments and review.

**Budget:**

The overall budget for Program Effectiveness Assessment and Implementation task is $40,000.

**TASK 2: BMP Effectiveness Calculator**

EOA will develop a Best Management Practices (BMP) Effectiveness Calculator for LCCWP Co-Permittees including the County and the Cities of Lakeport and Clearlake. The BMP Effectiveness Calculator will provide the LCCWP with data that can be used to produce a BMP Effectiveness Assessment Report and determine whether their Clear Lake Nutrient TMDL wasteload allocation (WLA) of 2,000 g/yr of phosphorus has been met, in compliance with reporting provisions of the Time Schedule Order R5-2019-1005. The Clear Lake Nutrient TMDL allocated loading of 90,000 kg/yr of phosphorus represents a required 40% reduction (on-average) from phosphorus loading to the Lake based on historical data (Tetra Tech 2004).1

The BMP Effectiveness Calculator will provide the LCCWP with a mechanism to quantitatively demonstrate progress towards achievement of their Clear Lake Nutrient TMDL WLA for Phosphorus. Because of high amounts of phosphorus in the soil, BMPs that control sediment or erosion are considered effective tools to reduce phosphorus inputs to the Lake. Therefore, the BMP Effectiveness Calculator will calculate sediment load reductions as a surrogate for phosphorus load reductions achieved to date through existing source control and structural BMPs implemented within the LCCWP Phase II Permit area (i.e., MS4 area). The types of BMPs included in the calculator will be based on the source control and structure BMPs identified in current LCCWP BMP Inventories that will be provided to EOA by LCCWP Co-

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Permittees. As needed and requested, additional BMPs may be added to the calculator based on information provided by the LCCWP.

EOA will develop the BMP Effectiveness Calculator through the following sub-tasks:

- **Task 2a. BMP Inventory Review.** EOA will review existing source control and structural BMP Inventories, provided by Co-Permittees, to identify the specific types of BMPs that will be included in the calculator tool and to understand the data available on BMP implementation in the watershed. At a minimum, Co-Permittees’ BMP Inventories are expected to identify the type, number, and treatment area of all existing structure and source control BMPs within each Co-Permittee MS4. Based on information provided in the BMP Inventories, EOA will develop maps that identify the area occupied by existing BMPs (e.g., the parcel locations) and/or the areas treated by each BMP. LCCWP will also provide EOA with dates of implementation that identify all BMPs that were implemented or enhanced after the start of the Clear Lake Nutrient TMDL (i.e., pre-TMDL BMPs and post-TMDL BMPs).

- **Task 2b. Literature Review.** EOA will conduct a literature review to identify the best currently available information on appropriate methods to evaluate sediment load reduction effectiveness of the types of BMPs identified in the LCCWP BMP Inventories. The literature review will support development of the calculator by identifying available data inputs, and other information needed to evaluate load reduction effectiveness. Sources reviewed will include the International BMP Database and other peer-reviewed studies on BMP effectiveness for sediment reduction. EOA will also review accounting methodologies used by other municipalities to document BMP stormwater load reduction effectiveness. For example, the Bay Area Stormwater Management Agencies Association (BASMAA) has produced a number of reports documenting methods currently used to account for stormwater load reduction effectiveness of various control measures for a variety of different pollutants.

- **Task 2c. Develop Accounting Methodologies.** Based on the results of the literature review and using best professional judgement, EOA will develop accounting methodologies to calculate the percent sediment load reductions achieved for each type of BMP identified in Co-Permittees BMP Inventories. The accounting methodologies will rely on available literature data and/or data provided by LCCWP in their BMP Inventories for all calculations.

- **Task 2d. Create Excel-based Spreadsheet Calculator Tool.** EOA will create an Excel spreadsheet tool to calculate the sediment load reductions for BMPs based on the accounting methodologies and data inputs identified in Task 2c. EOA will input the BMP Inventory data into the spreadsheet which will calculate the resulting load reductions achieved. The calculator tool will include an automatically generated summary table. The summary table will report the post-TMDL percent sediment load reductions achieved by each Co-Permittee. The percent load reductions will be reported to provide demonstration of progress towards the overall 40% percent load reduction that is required to achieve the Clear Lake Nutrient TMDL. If the load reduction summary indicates compliance with the TMDL WLA has not been achieved, the calculator tool may provide LCCWP with a tool to identify the number and type of additional BMPs that would be needed to achieve TMDL compliance.

- **Task 2e. Provide memo, documentation and guidance.** EOA will develop a memorandum that summarizes the calculator tool, accounting methodologies, assumptions, and data inputs. Additional guidance on how to use the calculator tool will be provided within the Excel Spreadsheet. As needed and requested by Co-Permittees, EOA will demonstrate use of the BMP Effectiveness Calculator Tool via a 1-hour virtual meeting using the WebEx platform.
Assumptions:

- One priority pollutant of concern (sediment) will be addressed in the BMP Effectiveness Calculator.
- Lake County staff will arrange communications with other Co-permittee staff with knowledge about various aspects of BMP implementation, for up to six one-hour conference calls.
- LCCWP staff will provide inventories of existing post-TMDL source control and structural BMPs and other relevant data needed for BMP effectiveness calculations, including descriptions of each type of BMP, and areas occupied, or areas treated by each BMP.
- The BMP effectiveness calculator will incorporate methodologies to estimate BMP effectiveness based on the best available information at the time of development. It is likely that treatment areas for structural BMPs are unknown and the parcel area will be used for this parameter.
- Lake County staff will organize meetings with other appropriate agency staff, as needed.
- Lake County staff will provide contacts and collect information requested by EOA from outside agencies.
- EOA will provide a one-hour WebEx training for LCCWP to demonstrate use of calculator.
- Co-Permittee staff will provide timely responses to questions submitted via email.

Task 2 Schedule:

- EOA will provide a draft BMP Effectiveness Calculator Tool and Memorandum to County staff for review by November 25, 2020, provided the BMP Inventories and all necessary data are received and a kick-off meeting with Co-Permittee staff is held by October 1, 2020.
- EOA will provide a demonstration of the BMP Effectiveness Calculator Tool to LCCWP staff as needed and requested following the draft submittal.
- All Comments on the draft BMP Effectiveness Calculator Tool and Memorandum should be returned to EOA by December 14, 2020. Comments from all Co-Permittees will be compiled into a single package.
- The BMP Effectiveness Calculator Tool and Memorandum will be finalized by December 18, 2021, after one round of comments and review.

Deliverables:

- Memorandum describing the BMP Effectiveness Calculator Tool
- Excel Spreadsheet-based BMP Effectiveness Calculator Tool - with guidance embedded within the calculator.

Budget:

The overall budget for the BMP Effectiveness Calculator Tool task is $44,000.

Task 3: Miscellaneous On-call Services

This task includes time for EOA to provide miscellaneous on-call tasks to assist the LCCWP Co-Permittees comply with the Phase II NPDES Permit. Example tasks include support for staff trainings on inspections and review of post construction BMPs, review of Annual Report attachments, and assistance with trash
Lake County Clean Water Program Stormwater Management Assistance  
August 17, 2020  
Page 6 of 6

management planning. This task will be initiated only upon written approval from County staff. Tasks requested by the County will be conducted as budget allows.

**Budget:**  
The overall budget set aside for Miscellaneous On-call Services task is $10,000.

**Closing**  
This proposal describes how EOA will provide specific tasks and on-call support services to the Lake County Clean Water Program during Fiscal Year (FY) 2020/21 for compliance with the Phase II NPDES Permit. The task schedules described in the Scope of Work assume that the contract will be fully executed by September 18, 2020. If the contract is delayed, task schedules will be shifted accordingly. It is assumed that County staff will serve as the primary point of contact and will manage a sole contract on behalf of the Co-Permittees.

The work will be conducted on a time-and-materials basis according to the EOA 2020 Fee Schedule. Our total not to exceed budget is $94,000. To provide maximum flexibility, the budget will not be managed on a task-by-task basis, rather, cost savings realized in one task may be applied to other tasks, as needed.

Thank you for the opportunity to submit a proposal. Please contact Bonnie de Berry at bdeberry@eoainc.com or (415) 336-4458 if you have any questions or would like to discuss this further.

Sincerely,
EOA, Inc.

Ray Goebel
Vice President

Attachments:    EOA 2020 Fee Schedule
Hi Angela,
I have attached a document that outlines the requirements of an alternative approach to the current 13267 and TSO Orders. The document also includes the revised deadline we will enforce if the County and co-permittees decide to go ahead with fulfilling the requirements of the original Orders.
Please let me know if you have any follow-up questions regarding the alternative approach.
Best,
Taran Sahota
Environmental Scientist
Central Valley Water Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
Taranjot.Sahota@waterboards.ca.gov

Alternative to TSO and 13267 Order Issued October 2019:

The requirements outlined in the 13267 Order and TSO emphasize determining the current load allocation reduction for the unincorporated Lake County area and stormwater piece. The alternative approach would prioritize putting together a report that summarizes implementation of management practices.

This option would focus on summarizing earlier requirements, including a compiled list of implemented management practices (pre- and post-TMDL adoption) and a map that provides information on where practices are implemented and the acreage associated with each practice. This inventory of management practices and maps would be detailed in a technical report that includes the following components:

- A comparison of pre- and post-TMDL management practices. This assessment would include an inventory of any applicable practices in place prior to the TMDL and an inventory of practices that were implemented following the TMDL, including how long each of these practices were in place.
- A total number of acres implementing all current management practices,
- A breakdown of area (e.g., total acres) being treated by each current, specific management practice and maps that show where each management practice is currently implemented and located within the County,
- Description of the implementation of current management practices (e.g., maintenance is conducted on a rotating 6-month schedule, post-fire management plan, ordinances/policies/procedures; and
- Description of any recent (last five years) change in management practices (e.g., changes made due to maintenance schedules, post-fire management practices/procedures, revisions to ordinances/policies/procedures, etc.).

While the information and estimate required in the current Order is important for the Board, this approach is being offered to close the loop on the TMDL and evaluate next steps. In addition, frequent extension requests caused by COVID-19, staffing issues, and a lack of funding have increased the timeframe for the original Orders past what the program was anticipating. This streamlined approach is structured to identify and acknowledge problems the County is facing while also moving forward with the TMDL to identify a more efficient path forward. The streamlined approach would be described in a revised 13267 Order with a revised due date, likely in Fall 2020.

If the County and co-permittees choose to move forward with the original Orders, the Board will reissue the Orders with a hard deadline of January 31, 2021 to provide the information and reports required in the TSO and 13267. The County has informed the Board that they intend to comply with the requirements through a consultant who will create a calculator to provide the load reduction estimate. For the County, this will mean securing funding, a consultant, and receiving the results in time to create this report due by January 2021.
Good Morning,

Just a follow-up – Andrew, Kevin and I had a meeting this morning. We agreed that it would be better to partner with you and the City of Clearlake and have an outside party do the Effectiveness report. If we could get a breakdown of what our costs would entail I would appreciate it.

Thanks,

Bonne C. Sharp

Bonne C. Sharp| Permit Technician| Community Development Dept.
City of Lakeport | 225 Park St. | Lakeport CA 95453
Phone: 707.263.5615 ext. 205 | FAX: 707.263.9413
Email: bsharp@cityoflakeport.com
July 9, 2020

Mike Baker
City of Clearlake Public Works

Dear Angela De Palma-Dow,

We welcome the opportunity to work with you and the County of Lake. This is a letter of intent to notify the County of Lake Water Resources Department that the City of Clearlake is committed as co-Permittees.

I have reviewed the MS4 monitoring plan and have spoke with City Manager Alan Flora and Public Works Director Dale Goodman. We would like to proceed jointly.

Thank you for your time.
Mike Baker
Superintendent Public Works
City of Clearlake
mbaker@clearlake.ca.us
Cell 707-350-5543
City Hall 707-994-8201 Ext 114
### Attachment 6A: COST Share calculations and options for Clear Lake TMDL - Only Clear Lake Basin Area

<table>
<thead>
<tr>
<th>Community</th>
<th>ACRES</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lucerne</td>
<td>705</td>
<td>3067</td>
</tr>
<tr>
<td>Kelseyville</td>
<td>1224</td>
<td>3353</td>
</tr>
<tr>
<td>Clearlake Oaks</td>
<td>1049</td>
<td>2359</td>
</tr>
<tr>
<td>North Lakeport</td>
<td>2408</td>
<td>3314</td>
</tr>
<tr>
<td>Upper Lake</td>
<td>374</td>
<td>1052</td>
</tr>
<tr>
<td>Nice</td>
<td>1204</td>
<td>2731</td>
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<tr>
<td>Clearlake Riveria</td>
<td>1340</td>
<td>3090</td>
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<tr>
<td>Soda Bay</td>
<td>464</td>
<td>1016</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td>19982</td>
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</table>

#### Acreage - Spatial Coverage

<table>
<thead>
<tr>
<th>MS4 Jurisdiction</th>
<th>Size (Acres)</th>
<th>MS4 Percentage of Clear Lake Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>1990</td>
<td>14%</td>
</tr>
<tr>
<td>Clearlake</td>
<td>3820</td>
<td>26%</td>
</tr>
<tr>
<td>County of Lake</td>
<td>8767</td>
<td>60%</td>
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<tr>
<td><strong>Total</strong></td>
<td>14577</td>
<td>100%</td>
</tr>
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</table>

#### Residential Density - Social Coverage

<table>
<thead>
<tr>
<th>MS4 Jurisdiction</th>
<th>Population</th>
<th>MS4 Population Percentage within the Clear Lake Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>4753</td>
<td>12%</td>
</tr>
<tr>
<td>Clearlake</td>
<td>15250</td>
<td>38%</td>
</tr>
<tr>
<td>County of Lake</td>
<td>19982</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>39985</td>
<td>100%</td>
</tr>
</tbody>
</table>

This box represents the cost share options for the EOA TMDL BMP Calculator Tool Task. Cost Share options are provided for both Population or Area based. TMDL tasks only apply to physical Clear Lake Basin area and any MS4 populations within.

**TMDL Calculator Cost-Share Estimates - $44,000**

<table>
<thead>
<tr>
<th>MS4 Jurisdiction - in Clear Lake Basin</th>
<th>Population-Based</th>
<th>Area-Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>$ 5,230.26</td>
<td>$ 6,160.00</td>
</tr>
<tr>
<td>Clearlake</td>
<td>$ 16,781.29</td>
<td>$ 11,440.00</td>
</tr>
<tr>
<td>County of Lake</td>
<td>$ 21,988.45</td>
<td>$ 26,400.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 44,000.00</td>
<td>$ 44,000.00</td>
</tr>
</tbody>
</table>

*Cost share based on Clear Lake Basin MS4 area only

*Population numbers are based on 2010 census data to remain consistent with the info that was provided under the current Storm Water Permit that was valid starting 2013.
### Attachment 6B: Total MS4 Area for Effectiveness Assessment & Improvement Plan (PEAIP) & Misc. / Training

This box represents the cost share options for the EOA PEAIAP and Misc. / Training Task. Cost Share options are provided for both Population or Area based. These tasks apply to the entire permit coverage area, including all county and city population growth boundaries within the county.

**EOA - PEAIP ($40,000) & Misc. ($10,000) - $50,000**

<table>
<thead>
<tr>
<th>MS4 Jurisdiction - in Clear Lake Basin</th>
<th>Population-Based</th>
<th>Area-Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>$4,932.44</td>
<td>$3,727.85</td>
</tr>
<tr>
<td>Clearlake</td>
<td>$15,825.74</td>
<td>$12,108.95</td>
</tr>
<tr>
<td>County of Lake</td>
<td>$29,241.82</td>
<td>$34,163.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$50,000.00</strong></td>
<td><strong>$50,000.00</strong></td>
</tr>
</tbody>
</table>

*Cost share based on all MS4 areas only

*population numbers are based on 2010 census data to remain consistent with the info that was provided under the current Storm Water Permit that was valid starting 2013.

### Residential Density - social coverage

<table>
<thead>
<tr>
<th>MS4 Jurisdiction</th>
<th>Population</th>
<th>MS4 Population Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>4753</td>
<td>10%</td>
</tr>
<tr>
<td>Clearlake</td>
<td>15250</td>
<td>32%</td>
</tr>
<tr>
<td>County of Lake</td>
<td>28178</td>
<td>58%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48181</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

### Acreage - Spatial Coverage

<table>
<thead>
<tr>
<th>MS4 Jurisdiction</th>
<th>Size (Acres)</th>
<th>MS4 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeport</td>
<td>1990</td>
<td>7%</td>
</tr>
<tr>
<td>Clearlake</td>
<td>6464</td>
<td>24%</td>
</tr>
<tr>
<td>County of Lake</td>
<td>18237</td>
<td>68%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26691</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
SUMMARY
This document outlines the methods that Lake County, the City of Lakeport, and the City of Clearlake use to satisfy the requirements set forth by the MS4 Phase II General Permit, Clear Lake’s TMDL for nutrients, and Resolution R5-2017-0057.

Developed By:
Rachel Kennard, The California Rural Water Association
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List of Acronyms

BLM – Bureau of Land Management
BMP – Best Management Practice
CFR – Code of Federal Regulations
CFS – Cubic Feet per Second
CL1 – The representative site for the City of Clearlake
COC – Chain of Custody
CO1 – The representative site for Clearlake Oaks
CR1 – The representative site for Clearlake Riviera
CWA – Clean Water Act
DO – Dissolved Oxygen
DOC – Dissolved Organic Carbon
DWR – Department of Water Resources
EC – Electrical Conductivity
HUC – Hydrologic Unit Code
HVL1 – The representative site for Hidden Valley Lake
K1 – The representative site for Kelseyville
LA – Load Allocation
L1 – The representative site for Lucerne
LL1 – The representative site for Lower Lake
Mg/L – Milligrams per liter
MS4 – Municipal Separate Storm Sewer System
M1 – The representative site for Middletown
NL1 – The representative site for North Lakeport
NOAA – National Oceanic and Atmospheric Administration
NO3 – Nitrate
NO2 – Nitrite
NPDES – National Pollution Discharge Elimination System
NTU – Nephelometric Turbidity unit
N1 – The representative site for Nice
POC – Particulate Organic Carbon
RSWMP – Regional Stormwater Management Plan
SB1 – The representative site for Soda Bay
TDS – Total Dissolved Solids
TKN – Total Kjeldahl Nitrogen
TMDL – Total Maximum Daily Load
TN – Total Nitrogen
TOC – Total Organic Carbon
TP – Total phosphorus
TSS – Total Suspended Solids
UL1 – The representative site for Upper Lake
USEPA – The United States Environmental Protection Agency
USFS – United States Forest Service
WLA – Waste Load Allocation
Regional Storm Water Monitoring Program

The City of Lakeport, the City of Clearlake, and Lake County (hereinafter referred to as “co-permittees”) joined planning, collaboration, and implementation efforts to establish a Lake Countywide Regional Storm Water Monitoring Program (LC RSWMP). Its purpose is to collectively fulfill the requirements set forth by the National Pollution Discharge Elimination System (NPDES) MS4 Phase II general permit, to monitor Total Maximum Daily Load (TMDL) compliance for Clear Lake, and to fulfill requirements set forth by Resolution R5-2017-0057 (Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticide Discharges). Partnership development was inspired by permit language that encouraged jurisdictions to comply collaboratively with regulatory requirements to promote cost savings through economies of scale while simultaneously protecting valuable aquatic resources in Lake County. The Central Valley Regional Water Board (hereinafter referred to as “the Board”) require the co-permittees to decrease sediment nutrient inputs to Clear Lake from urban runoff by 40% through water quality monitoring and the implementation of pollutant controls.

The LC RSWMP, subject to approval from the Board, satisfies the section E.13 of the NPDES MS4 Phase II general permit, TMDL monitoring requirements, and Resolution No. R5-2017-0057. Samples will be taken from a combination of stationary automatic samplers, portable handheld devices, and probes placed in representative locations in each catchment to assess suspended solids, turbidity, phosphorus loading, monitor TMDL requirements, and determine if pyrethroids are present. Periodic inspection of automatic samplers will be necessary to ensure the equipment is in good working condition. Additional grab samples and increased monitoring during storm events may be necessary to achieve overall program management goals.

Due to the lack of immediately available resources, the LC RSWMP is written in phases (1 and 2). First is a general description of the overall monitoring plan as it is anticipated to be executed by 2024. Then the plan is deconstructed into Phase 1, which outlines monitoring that will be conducted with immediately available resources and funding, and Phase 2, which outlines monitoring with resources that are anticipated to become available by 2024.

While the County and other co-permittees will attempt to maintain the timelines and milestones as listed in this monitoring plan, the ability to meet the staffing and financial burden of complying with the Plan, and related programming, is a constant and consistent challenge. Successful compliance and completion with the plan, along the four-year required timeline will, to a great extent, depend on future natural disaster occurrences and recovery capability that may have significant impact on the availability to support the required monitoring requirements and program maintenance needed to accomplish the goals and deliverables outlined in this plan.
Clear Lake Total Maximum Daily Load

This section addresses the permit conditions outlined in Attachment G – TMDLs and Time Schedule Order R5-2019-1005. Under the Clean Water Act (CWA) § 303(d), States are required to identify a list of impaired water bodies and develop and implement TMDLs for these water bodies (33 USC § 1313(d)(1)). Clear Lake was listed on the CWA § 303(d) impaired water bodies list in 1986 in direct response to phosphorous-driven nuisance algal blooms in the spring and summer months that impaired recreation and increased treatment costs for drinking water treatment plants. On June 23, 2006, the Board adopted Resolution No. R5-2006-0060, Amending the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin Rivers Basins for the Control of Nutrients in Clear Lake. The United States Environmental Protection Agency (USEPA) approved a TMDL for Clear Lake on September 19, 2007.

TMDLs are established for all water bodies listed on the CWA § 303(d) list and are accompanied with a pollutant reduction target for both point and nonpoint sources. TMDLs are calculated to reflect the maximum amount of a pollutant allowed to enter a water body to ensure it will meet established water quality standards. TMDL’s include the following elements: an analysis to identify sources of pollutants contributing to the impairment, load allocations for different sources (point and non-point sources), an implementation plan, and compliance time schedules. Compliance with TMDL requirements via the reduction of a specified pollutant is expected to result in an improvement in water quality, and specifically a reduction in harmful algal growth, leading to improvements in overall ecosystem health.

Clear Lake has a TMDL for sediment nutrients – specifically for sediment phosphorus. Several studies characterized the conditions of Clear Lake and concluded that excess phosphorus contributes to the occurrence of nuisance algal blooms, therefore, controlling external phosphorus loading is the best mechanism to reduce algal blooms in Clear Lake (Horne, 1975; Richerson et al., 1994). In recent years, however, studies have shifted the focus to internal phosphorus loading as a major contributor to algal blooms in Clear Lake (Winder, 2010). Many sources of phosphorus have been identified for Clear Lake including urban runoff, grading and construction, timber harvesting, construction, historical mining activities, gravel mining, fertilizer use, and wildfires. The ability to mitigate internal phosphorous loading and related impacts is further reduced through the removal and conversion of wetlands to agriculture or development around the lake; an estimated 85% of the lake’s natural wetlands having been removed since post-settlement development initiated (Richerson et al. 2008).

Clear Lake’s TMDL load allocation (LA) (including point and non-point sources) is 87,100kg P/year, an overall reduction of 40% from average annual phosphorus loading. The load is shared between co-permittees, Caltrans, the United States Bureau of Land Management (BLM), the United States Forest Service (USFS), and irrigated agriculture. The co-permittees have a waste load allocation (WLA) of 2,000 kg P/year based on a 5-year rolling average for phosphorus. Refer to Figure 1 for visual representation of the TMDL for Clear Lake. The LC
RSWMP aims to evaluate co-permitees compliance with the TMDL WLA. The LC RSWMP will be revised as needed to meet TMDL WLA requirements.

![Figure 1: Conceptual representation of TMDL allotments for Clear Lake. Caltrans and Co-permitees are considered point sources of pollution and have waste allocation allotments (WLA) of 100kg P/year and 2,000kg P/Year, respectively. Non-point sources, including the Bureau of Land Management, the United States Forest Service, irrigated agriculture, and Lake County have a collective load allocation (LA) of 85,000kg P/Year based on a 5-year rolling average.]

**Management Questions**

The following management questions specified in section E.13 of the permit were used to guide the developments of the RSWMP:

1. Are water quality standards being met in receiving waters?
2. What is the extent and magnitude of the current or potential receiving water problems?
3. What is the relative urban runoff contribution to the receiving water problem(s)?
4. What are the sources to urban runoff that contribute to the receiving water problem(s)?
5. Are conditions in receiving waters getting better or worse?

The LC RSWMP aims to answer each management question as data from the LC RSWMP becomes available for analysis. If one or more of these questions cannot be answered after Phase II of the LC RSWMP is implemented, the LC RSWMP will be modified as necessary to answer all management questions.

**Representative Monitoring Locations**

One representative monitoring location was chosen for each catchment subject to the Phase II MS4 permit. The catchments covered by the permit are the City of Lakeport, the City of Clearlake, and several unincorporated areas under Lake County including Clearlake Oaks, Clearlake Riviera, Kelseyville, Soda Bay, North Lakeport, Nice, Lucerne, and Upper Lake.
Lower Lake is covered under the Phase II MS4 permit but is not subject to the TMDL requirements for Clear Lake because it drains into Cache Creek - not Clear Lake. However, Lower Lake is included in the RSWMP due to its proximity to Clear Lake. Hidden Valley Lake and Middletown are also covered under the Phase II MS4 permit; however, they are located 10 miles south of Clear Lake in a different watershed. Hidden Valley Lake and Middletown are not included in the LC RSWMP for TMDL compliance, but representative monitoring locations were selected for these areas to satisfy Resolution No. R5-2017-0057 and any future monitoring requirements.

In 2015, the co-permittees collaborated efforts to establish a comprehensive GIS map that outlines all applicable culverts, outfalls, roads, inlets, and parcels covered by the NPDES MS4 Phase II general permit. Using GIS, the co-permittees evaluated HUC 12 watershed boundaries, elevation differences throughout the catchments, drainage patterns (including drain inlet (DI) pipe layout), overland flow on impermeable surfaces, and available sampling locations for each urban catchment area to determine representative sample locations.

Each catchment has unique gradients, watershed boundaries, and drainage patterns, therefore, a combination of the above-mentioned techniques were utilized for each catchment. Each method for selecting the representative sampling location is unique, however, there are similarities in how sampling locations were selected. For example, each urban catchment area that bordered the shoreline of Clear Lake has a representative monitoring location that discharges directly into the lake whereas inland urban catchment areas have sampling locations that discharge into a tributary of Clear Lake. All representative sampling locations are located down gradient of the most densely-populated portion of the catchment. Each location is at a readily available culvert or outfall, that can be accessed easily and quickly as most sampling will occur at all sites within a short time period. In the event that a representative sampling location is no longer available for sampling due to road construction, natural disaster, or other phenomena, the LC RSWMP will be revised to reflect these changes. Appendix A describes the methodology used to select representative sample locations in each catchment. Figure 2 is a map that shows the locations of representative sample sites. Table 1 shows the coordinates and nearest address for each representative sample site.
Figure 2: Map showing the general location of sample site locations for each urban catchment subject to TMDL requirements
Table 1: Representative Monitoring Locations

<table>
<thead>
<tr>
<th>Region Name</th>
<th>Site Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Closest Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Clearlake</td>
<td>CL1</td>
<td>38.95184</td>
<td>-122.642</td>
<td>14460 Lakeshore Drive, Clearlake</td>
</tr>
<tr>
<td>Clearlake Oaks</td>
<td>CO1</td>
<td>39.02295</td>
<td>-122.667</td>
<td>520 Schindler St, Clearlake Oaks</td>
</tr>
<tr>
<td>Clearlake Riviera</td>
<td>CR1</td>
<td>38.9584</td>
<td>-122.723</td>
<td>4767 Cascade Way, Kelseyville</td>
</tr>
<tr>
<td>Kelseyville</td>
<td>K1</td>
<td>38.98013</td>
<td>-122.842</td>
<td>5160 Gunn St, Kelseyville</td>
</tr>
<tr>
<td>City of Lakeport</td>
<td>LP1</td>
<td>39.040489</td>
<td>-122.912023</td>
<td>Outfall on First Street, Lakeport, CA</td>
</tr>
<tr>
<td>Lower Lake</td>
<td>LL1</td>
<td>38.91368</td>
<td>-122.61</td>
<td>9585 Lake St, Lower Lake</td>
</tr>
<tr>
<td>Lucerne</td>
<td>L1</td>
<td>39.09381</td>
<td>-122.8</td>
<td>6044 State Hwy 20, Lucerne</td>
</tr>
<tr>
<td>Nice</td>
<td>N1</td>
<td>39.12101</td>
<td>-122.862</td>
<td>2715 Lakeshore Blvd, Upper Lake</td>
</tr>
<tr>
<td>North Lakeport</td>
<td>NL1</td>
<td>39.09272</td>
<td>-122.903</td>
<td>4220 Lakeshore Blvd, Lakeport</td>
</tr>
<tr>
<td>Soda Bay</td>
<td>SB1</td>
<td>39.01025</td>
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<td>Upper Lake</td>
<td>UL1</td>
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<td>Hidden Valley Lake</td>
<td>HVL1</td>
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<td>19917 Mountain Meadow S Hidden Valley Lake</td>
</tr>
<tr>
<td>Middletown</td>
<td>M1</td>
<td>38.74832</td>
<td>-122.617</td>
<td>21337 Bush St, Middletown</td>
</tr>
</tbody>
</table>

Data Collection Methods

This section outlines routine monitoring parameters, frequency of sample collection, and methods for making sample determinations. The section satisfies section E.13 – Water Quality Monitoring from the MS4 Phase II General Permit and Resolution No. R5-2017-0057. Sampling that satisfies section E.13 of the permit is referred to as “routine” sampling whereas sampling that satisfies Resolution No. R5-2017-0057 is referred to as “pyrethroid” sampling.

Routine Water Quality Monitoring

Routine sampling satisfies section E.13 of the permit wherein sampling in accordance with TMDL compliance also satisfies the requirements of section E.13. Clear Lake’s TMDL covers the following urban catchment areas: The City of Lakeport, the City of Clearlake, North Lakeport, Upper Lake, Nice, Lucerne, Clearlake Oaks, Clearlake Riviera, Soda Bay and Kelseyville. Lake County also included Lower Lake into routine monitoring because it is a significant urban area around Clear Lake. The routine monitoring section does not include Hidden Valley Lake or Middletown.

Each urban catchment will be sampled for total phosphorus (TP), total nitrogen (TN), nitrate + nitrite (NO$_3$ + NO$_2$), total kjeldahl nitrogen (TKN), total suspended solids (TSS), turbidity, total dissolved solids (TDS), pH, temperature, electric conductivity (EC), and dissolved oxygen (DO) during peak storm events to determine compliance with the TMDL WLA for co-permittees. For the purposes of urban runoff TMDL compliance, co-permittees agreed that the following conditions warrant sample collection:

- When rainfall exceeds one inch in an hour or;
- When major tributary flow exceeds 200-400 cubic feet per second (cfs).
Samples will be collected during the wet season (October-April). The abovementioned criteria will guide sample collection in the following ways:

1. Each urban catchment will be sampled at the representative sample site. If the representative sample site is temporarily unavailable for sampling, the sample will be collected at an alternative location as determined by the supervising staff members. If the representative sample site is permanently unavailable for sampling, the LC RSWMP will be revised accordingly within one calendar year.
2. At least one sampling criteria should be met at the time of sampling
3. Sampling is mandatory for the first storm event of the wet season
4. An additional 4 samples may be taken during the wet season at the discretion of co-permittee staff.
5. If neither criterion is present during the entire wet season, no sampling is required.
6. If a flood is in the forecast, samples should be taken before the peak storm event to avoid safety hazards of high flows.

Because urban drainages and culverts do not have flow gages, co-permittees use publicly available real-time stream flow data provided by a partnership between the United States Geological Survey (USGS) and the California Department of Water Resources (DWR). The California Nevada River Forecast Center website by the National Oceanic and Atmospheric Administration (NOAA) (www.cnrfc.noaa.gov) provides this public data to assist local agents to determine peak storm events, tributary flow, and precipitation patterns over a twelve day period. The website shows six days prior to current conditions and the future forecast for six days. The Co-permittees may supplement the available precipitation data with live flow data in the DWR website for Central Data Exchange (CDEC) (http://cdec.water.ca.gov/dynamicapp/queryGroup?s=MFE). Both data websites will be consistently monitored in the wet season to determine representative sampling events.

Pyrethroid Monitoring

Pyrethroid sampling satisfies Resolution No. R5-2017-0057. During the first year of implementation, not to surpass 21 October 2021, Clear Lake will be monitored for total pyrethroids, total organic carbon (TOC), dissolved organic carbon (DOC), particulate organic carbon (POC), and H. azteca (sand fly) toxicity as required by the Central Valley Regional Water Quality Control Board in Resolution No. R5-2017-0057. A minimum of four water column samples and five sediment toxicity samples shall be conducted. Water column samples will be monitored for total pyrethroids, TOC and DOC, and toxicity using H. Azteca as a test organism. Sediment samples will be monitored for total pyrethroids and toxicity using H. Azteca as a test organism. If the results exceed the triggered levels specified in Table IV-Z of Resolution R5-2017-0057, co-permittees must develop a pyrethroids control program with several elements specified in the basin plan amendment. Samples will be taken at a representative monitoring location chosen by supervising staff. The representative monitoring location should represent Clear Lake, not a specific urban catchment.
Sampling Protocols & Analytical Methods

Several analyses will be analyzed by the Alpha Analytical Laboratories. Alpha Analytical Laboratories will provide sample bottles for the analyses conducted at the lab. The various analyses have different hold time ranging from 7-28 days, however, all samples should be kept on ice or refrigerated and delivered or picked up by the lab within 72 hours of the sampling event to ensure the lab has enough time to log and set up the samples. Analytical reports should be provided by Alpha Analytical Laboratories within 10 business days; however, results may be delayed during peak stormwater season. Chain of custody (COC) reports are available on Alpha Analytical Laboratory’s website (https://www.alpha-labs.com/forms.html). COC’s must be properly relinquished to any additional handlers, transporters, or lab personnel. Samples not analyzed by Alpha Analytical Laboratories have specific instructions for data collection.

Routine Sampling

Total phosphorus (TP), nitrate + nitrite (NO₃ + NO₂), and total kjeldahl nitrogen (TKN) samples will be taken by automatic samplers and sent to Alpha Analytical Laboratories, Inc. for analysis via SM4500 (standard method 4500 for stormwater compliance). The bottle requirement is a 1L polyethylene bottle preserved with sulfuric acid (H₂SO₄). The samples have a 28-day hold time. The analysis should be written on the COC as “P Total, N Total”. Analytical results will show total phosphorus, nitrate + nitrite, total kjeldahl nitrogen, and total nitrogen (the summation of NO₂+NO₃+TKN) in milligrams per liter (mg/L).

Total suspended solids (TSS) samples will be taken by automatic samplers and sent to Alpha Analytical Laboratories, Inc. for analysis via SM2540 (standard method 2540 for stormwater compliance). The bottle requirement for TSS is a 1-liter unpreserved polyethylene bottle. TP samples have a 7-day hold time. The analysis should be written on the COC as “TSS”.

Turbidity will be taken in-house via a HACH2100Q portable turbidimeter. The HACH2100Q comes with three reusable 10mL glass vials for analysis; only one glass vial is used for the analysis. Before sampling, be sure to rinse the sample bottle with deionized water (DI) and wipe the outside of the vial with a lint-free cloth. Turbidity has a 48-hour hold time, so samples must be analyzed as soon as possible after sample collection. Results should be recorded on the field data collection sheet (see Appendix C). In the case where raw turbidity exceeds the meter maximum, dilution protocols will follow the EPA 180.1 method for the HACH 2100Q meter. No dilutions over 75% will be performed as this level of dilution significantly decreases reliability of results. Refer to the owner’s manual for calibration and verification recommendations. It is considered good practice to verify readings with turbidity standards (20NTU, 100NTU, 800NTU) before each use. Records of calibration should be kept on file indefinitely. Do not use expired turbidity standards for calibration and verification. Most turbidity standards contain formaldehyde and are considered a hazardous waste. Dispose of turbidity standards according to state and federal regulations.

Total dissolved solid (TDS), pH, temperature, electric conductivity (EC), and dissolved oxygen (DO) samples will be taken in situ with a YSI Professional Plus probe and meter. The
YSI Professional Plus probe and meter is used by dipping the probe directly in the waterway or sample bottle. If a sample bottle is used, ensure it has been rinsed with DI water and never previously held a preservative. Results should be recorded on the field data collection sheet (see Appendix C). Refer to the owner’s manual for calibration and verification recommendations. Records of calibration should be kept on file indefinitely. Table 2 outlines the general requirements for routine sampling and Table 3 provides a sample monitoring schedule.

Repeated measures will be collected, and bracket resolutions calculated for at least one site during each sampling event to ensure equipment is collecting accurate and precise readings. This information is collected on the Storm Water Monitoring Datasheet forms (Appendix C).

<table>
<thead>
<tr>
<th>#</th>
<th>Constituent</th>
<th>Analyzed by</th>
<th>Method</th>
<th>Bottle Req.</th>
<th>Hold Time</th>
<th>Temp. Req.</th>
<th>Results Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Phosphorus (TP)</td>
<td>Alpha Analytical Laboratories</td>
<td>SM4500</td>
<td>1-liter poly preserved with H₂SO₄</td>
<td>28 days</td>
<td>4°C</td>
<td>Analytical Report</td>
</tr>
<tr>
<td>2</td>
<td>Nitrate + Nitrite (NO₃ + NO₂)</td>
<td></td>
<td>SM2540</td>
<td>1-liter poly unpreserved</td>
<td>7 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Total Kjeldahl Nitrogen (TKN)</td>
<td></td>
<td>HACH2100Q</td>
<td>10mL glass vial</td>
<td>48 hours</td>
<td></td>
<td>Field Collection Data Sheet</td>
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<tr>
<td>4</td>
<td>Total Suspended Solids (TSS)</td>
<td>Field Personnel</td>
<td>YSI Professional Plus probe and meter</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>5</td>
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</tr>
<tr>
<td>6</td>
<td>Total Dissolved Solids (TDS)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Electrical Conductivity (EC)</td>
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<td></td>
<td></td>
<td></td>
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<td>9</td>
<td>Temperature</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dissolved Oxygen (DO)</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Routine Sample Schedule

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>Sample Location</th>
<th>Analyses</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>The City of Clearlake</td>
<td>CL1</td>
<td>TP, NO₃ + NO₂, TKN, TSS, Turbidity, TDS, pH, Temperature, EC, DO</td>
<td>Peak Storm Events: When rainfall exceeds one inch in an hour <a href="http://www.cnrfc.noaa.gov">www.cnrfc.noaa.gov</a> or; When tributary flow is 200-400 (cfs) <a href="http://cdec.water.ca.gov/dynamicapp/queryGroup?s=MFE">http://cdec.water.ca.gov/dynamicapp/queryGroup?s=MFE</a> Sampling is required for the first storm event. 4 additional samples can be taken at co-permittee staff discretion.</td>
</tr>
<tr>
<td>The City of Lakeport</td>
<td>LP1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Lakeport</td>
<td>NL1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Lake</td>
<td>UL1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nice</td>
<td>N1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lucerne</td>
<td>L1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearlake Oaks</td>
<td>CLO1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Lake</td>
<td>LL1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearlake Riviera</td>
<td>CR1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soda Bay</td>
<td>SB1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kelseyville</td>
<td>K1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pyrethroid Monitoring

Total pyrethroids water column will be taken by automatic samplers, and some water column samples, and all sediment samples will be collected by field personnel and sent to Alpha Analytical Laboratories, Inc. for analysis via EPA8270. EPA8270 for water column samples requires two 1-liter unpreserved amber glass bottles. EPA8270 for sediment samples requires an 8oz wide mouth glass jar. Total pyrethroid samples have a 14-day hold time. Results for water column samples will be in mg/L while sediment sample results will be in mg/kg. The analysis should be written on the COC as “total pyrethroids”.

Total organic carbon (TOC) water column samples will be taken by automatic samplers or by field personnel and sent to Pacific EcoRisk Laboratory for analysis via SM5310C. SM5310C for TOC water column samples requires two 40mL amber glass vials preserved with phosphoric acid. TOC samples have a 28-day hold time. Results for water column samples will be in mg/L. The analysis should be written on the COC as “TOC”.

Dissolved organic carbon (DOC) water column samples will be taken by automatic samplers or by field personnel and sent to Pacific EcoRisk Laboratory for analysis via SM5310C. SM5310C for DOC water column samples requires one 125mL unpreserved amber glass bottle. DOC samples have a 28-day hold time. Results for water column samples will be in mg/L. The analysis should be written on the COC as “DOC”. Particulate organic carbon (POC) may be calculated by using the following formula: POC = TOC-DOC.

H. azteca toxicity water column and sediment samples will be taken by automatic samplers or by field personnel and sent to Pacific EcoRisk Laboratory. Table 4 outlines the general requirements for pyrethroid sampling and Table 5 provides a sample monitoring schedule.

### Table 4: Pyrethroid Sampling Protocol

<table>
<thead>
<tr>
<th>No.</th>
<th>Constituent</th>
<th>Sample Type</th>
<th>Analyzed by Method</th>
<th>Bottle Req.</th>
<th>Hold Time</th>
<th>Temp Req.</th>
<th>Results Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total Pyrethroids</td>
<td>Water Column</td>
<td>EPA625.1M</td>
<td>2x 1L unpreserved amber glass</td>
<td>3 days</td>
<td>Cool (6°C)</td>
<td>Analytical Report</td>
</tr>
<tr>
<td>2</td>
<td>Sediment</td>
<td></td>
<td>EPA8270M</td>
<td>2x 8oz unpreserved glass jar</td>
<td>14 days</td>
<td>Frozen</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Total Organic Carbon (TOC)</td>
<td>Water Column</td>
<td>SM5310C</td>
<td>2x 40mL amber glass (H₃PO₄)</td>
<td>28 days</td>
<td>Cool (6°C)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dissolved Organic Carbon (DOC)</td>
<td>Water Column</td>
<td>SM5310C</td>
<td>125mL unpreserved amber glass</td>
<td>28 days</td>
<td>Cool (6°C)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Particulate Organic Carbon (POC)</td>
<td>Water Column</td>
<td>Internal Calculation</td>
<td>POC = TOC-DOC</td>
<td>N/A</td>
<td>N/A</td>
<td>Field Data Sheet</td>
</tr>
<tr>
<td>6</td>
<td>H. azteca toxicity bioassay</td>
<td>Water Column</td>
<td>EPA-821-R-02-012</td>
<td>1-gallon amber glass bottle x2</td>
<td>36 hours</td>
<td>Cool (6°C)</td>
<td>Analytical Report</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Sediment</td>
<td>EPA100.1</td>
<td>2-liter jar</td>
<td>14 days</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5a: Pyrethroid Sample Schedule

<table>
<thead>
<tr>
<th>Sample Location</th>
<th>Analyses</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representative</td>
<td>Water Column: Total Pyrethroids, TOC, DOC, POC (internal calculation</td>
<td>Water Column Samples: 4 discrete sample events taken by October 21, 2021</td>
</tr>
<tr>
<td>Sample Location</td>
<td>– no samples), Toxicity bioassay (<em>H. Azteca</em>)</td>
<td></td>
</tr>
<tr>
<td>in Clear Lake</td>
<td>Soil: Total Pyrethroids, Toxicity bioassay (<em>H. Azteca</em>)</td>
<td></td>
</tr>
</tbody>
</table>

Table 5b: Pyrethroid Triggers / Exceedance Levels

<table>
<thead>
<tr>
<th>Target Pyrethroid</th>
<th>Acute (ng/L) / (µg/L)</th>
<th>Chronic (ng/L) / (µg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>0.8 / 0.008</td>
<td>0.1 / 0.001</td>
</tr>
<tr>
<td>Cyfluthrin</td>
<td>0.8 / 0.008</td>
<td>0.2 / 0.002</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>1.0 / 0.01</td>
<td>0.3 / 0.003</td>
</tr>
<tr>
<td>Esfenvalerate</td>
<td>2.0 / 0.02</td>
<td>0.3 / 0.003</td>
</tr>
<tr>
<td>Lambdacyhalothrin</td>
<td>0.7 / 0.007</td>
<td>0.3 / 0.003</td>
</tr>
<tr>
<td>Permethrin (total)</td>
<td>6 / 0.006</td>
<td>1 / 0.001</td>
</tr>
</tbody>
</table>

†These values are identified by UC Davis 5th Percentile Criteria and provided in the updated Central Valley Regional Water Quality Control Board titled “Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Pyrethroid Pesticides Discharges Final Staff Report” (June 2017) Available: https://www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/staff_report_bpa_dev/2017june/2017june_pyrbpa_fsr.pdf

Phase I Implementation

Five automatic samplers are expected to be installed in 2020. They will be installed at the representative sampling locations in Clearlake Oaks (CLO1), Lower Lake (LL1), Nice (N1), Lucerne (L1) and North Lakeport (NL1). Grab samples will be taken from representative sample locations in Upper Lake (UL1), the City of Lakeport (LP1), the City of Clearlake (CL1), Kelseyville (K1), Soda Bay (SB1), Clearlake Riviera (CR1), Hidden Valley Lake (HVL1), and Middletown (M1). Routine and Pyrethroid samples will be taken during Phase I. Table 6 shows a tentative budget for Phase I implementation.

Table 6: Phase I Implementation Budget

<table>
<thead>
<tr>
<th>Co-Permittee</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Lakeport</td>
<td>Total Phosphorus (TP)</td>
<td>5</td>
<td>$55.00</td>
<td>$275.00</td>
</tr>
<tr>
<td></td>
<td>Nitrate + Nitrite (NO$_3$ + NO$_2$),</td>
<td>5</td>
<td>$85.00</td>
<td>$425.00</td>
</tr>
<tr>
<td></td>
<td>Total Kjeldahl Nitrogen (TKN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Suspended Solids (TSS)</td>
<td>5</td>
<td>$35.00</td>
<td>$175.00</td>
</tr>
<tr>
<td></td>
<td>Labor Hours</td>
<td>20</td>
<td>$44.43</td>
<td>$888.60</td>
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<tr>
<td></td>
<td>Total for City of Lakeport</td>
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<td>$1763.60</td>
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<td></td>
<td>Total Phosphorus (TP)</td>
<td>5</td>
<td>$55.00</td>
<td>$275.00</td>
</tr>
<tr>
<td></td>
<td>Nitrate + Nitrite (NO$_3$ + NO$_2$),</td>
<td>5</td>
<td>$85.00</td>
<td>$425.00</td>
</tr>
<tr>
<td></td>
<td>Total Kjeldahl Nitrogen (TKN)</td>
<td></td>
<td></td>
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</table>
Shared Expenses

1Wate Boards estimated total cost for pyrethroid requirements to be around $44,000 as stated in the pyrethroid order 13267 and 13383.

2This number is estimated at 1 hour to sample + 1 hour of prep + 30 minutes travel time per sample for each of the required sites (n=4) with an estimated $65 per hour as labor charge (average between Lakeport and County). These values are subject to change and are a rough estimation for the cost of this item.

Phase II Implementation

By 2024, the co-permittees expect to install automatic samplers at all thirteen catchments. Sampling will be a mix of automatic sampling, grab samples, handheld analysis, and probe analysis. Routine samples will be taken during Phase II. If the results of pyrethroid sampling exceeds the triggered levels, there may be additional pyrethroid samples required in the future. If the results from pyrethroid samples show that there are no exceedances (Table 5b), no additional pyrethroid samples will be collected. Table 7 shows a tentative budget for Phase II implementation. Table 8 outlines the average annual costs of routine monitoring.

Table 7: Phase II Implementation Budget

<table>
<thead>
<tr>
<th>Co-Permittee</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Price</th>
<th>Total</th>
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<tbody>
<tr>
<td>City of Lakeport</td>
<td>Total Phosphorus (TP)</td>
<td>5</td>
<td>$55.00</td>
<td>$275.00</td>
</tr>
<tr>
<td></td>
<td>Nitrate + Nitrite (NO\textsubscript{3} + NO\textsubscript{2}), Total Kjeldahl Nitrogen (TKN)</td>
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<td>$85.00</td>
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<td>Labor Hours</td>
<td>20</td>
<td>$44.43</td>
<td>$888.60</td>
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<td>Automatic Sampler (Discrete purchase)</td>
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<td>City of Clearlake</td>
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<td>Number of Samples</td>
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<tr>
<td>------------------</td>
<td>------------------</td>
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<td></td>
<td>Total Phosphorus (TP)</td>
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<td>$275.00</td>
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<td></td>
<td>Nitrate + Nitrite (NO₃ + NO₂), Total Kjeldahl Nitrogen (TKN)</td>
<td>5</td>
<td>$85.00</td>
<td>$425.00</td>
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<td>$175.00</td>
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<td></td>
<td>Labor Hours</td>
<td>???</td>
<td>???</td>
<td>???</td>
</tr>
<tr>
<td></td>
<td>Automatic Sampler (Discrete purchase)</td>
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<tr>
<td>Total for City of Clearlake</td>
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<table>
<thead>
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<th>Lake County</th>
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<tr>
<td></td>
<td>Total Phosphorus (TP)</td>
<td>5 (x9) = 45</td>
<td>$55.00</td>
<td>$2,475.00</td>
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<td>Nitrate + Nitrite (NO₃ + NO₂), Total Kjeldahl Nitrogen (TKN)</td>
<td>5 (x9) = 45</td>
<td>$85.00</td>
<td>$3,825.00</td>
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<td></td>
<td>Total Suspended Solids (TSS)</td>
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<td>$35.00</td>
<td>$1,575.00</td>
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<td></td>
<td>Labor Hours</td>
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<td>$1760.00</td>
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<td>Automatic Sampler (Discrete purchase)</td>
<td>1(x6) = 6</td>
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<td>$37,200.00</td>
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<td>$46,835</td>
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Table 8: Average Annual Cost of Routine Monitoring

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<th>Price for one sample event</th>
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<td>City of Lakeport</td>
<td>Analytical Testing - Routine</td>
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<td>$175</td>
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<td>2100</td>
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<td>City of Clearlake</td>
<td>Analytical Testing - Routine</td>
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<td>Labor Hours, $</td>
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<td>???</td>
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<tr>
<td>Total</td>
<td>???</td>
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<td>Lake County</td>
<td>Analytical Testing - Routine</td>
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<td>28; $2,540</td>
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<td>$5690</td>
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RSWMP Revision History

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<tr>
<th>Date Revised</th>
<th>Reviewer(s)</th>
<th>Changes or Comments</th>
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<tr>
<td>Created: May 2020</td>
<td>Rachel Kennard</td>
<td>Established RSWMP program procedures and phased implementation to satisfy Resolution No. R5-2017-0057, TMDL and MS4 Phase II permit requirements.</td>
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<tr>
<td>Aug 18 2020</td>
<td>Angela De Palma-Dow</td>
<td>Adjusted Pyrethroid section and added Basin plan Pyrethroid trigger table 5b. and added labor hours estimates</td>
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Appendix A: Methodology for Representative Sample Site Selection

The City of Lakeport

LP1 is the representative monitoring location for the City of Lakeport. Forbes creek is a tributary into Clear Lake and goes through a densely-populated region of The City of Lakeport. The city of Lakeport is entirely within the HUC 180201160306 (HUC 306) watershed boundary. HUC 306 spans a relatively flat terrain and does not have a single drainage terminus point. Single drainage terminus points in watershed boundaries are typical of watersheds characterized by sharp changes in elevation. Since there are only small changes in elevation throughout the HUC 306 watershed boundary, drainage is evenly distributed throughout the catchment with an ultimate discharge into Clear Lake that spans the entire shoreline of Lakeport. The best spot for representative monitoring of urban runoff is at the outfall located at the terminus of first street, in Lakeport, California.
Figure 3: Map showing the representative sample site for urban runoff in the City of Lakeport
The City of Clearlake

CL1 is the representative sample site for the City of Clearlake (see figure 4). The City of Clearlake is the largest city in Lake County. It spans three watershed boundaries: HUC 180201160309 (HUC 309), HUC 180201160310 (HUC 310), and HUC 180201160602 (HUC 602). HUC 309 includes the majority of city and drains into Clear Lake. HUC 310 encompasses a small part of the southern portion of Clearlake and is considered a part of the Clear Lake watershed that includes the entire lake body, and HUC 602 includes the southernmost part of the city and drains into Cache Creek. For the purpose of representative monitoring for the Clear Lake TMDL, the representative sampling location is located in HUC 309. HUC 309 includes the most densely populated regions of Clearlake and encompasses the vast majority of the city.

The City of Clearlake does not contain any major tributaries into Clear Lake. Directly northeast of the city is the Bald Mountain Range characterized by steep slopes and porous soils. Although the city is backed by a mountain range, the City of Clearlake does not contribute a significant amount of natural runoff mostly due to the porosity of soils in the Bald Mountain range. However, it is the most densely-populated city in the region contributes to urban runoff. A representative monitoring location in Clearlake is best near the densely-populated regions of the city.

The urban area of Clearlake with the highest elevation within HUC 309 is at the intersection of Boyles Avenue and Davis Street (1,579ft) and the points of lowest elevation are at the outfalls that discharge directly into Clear Lake (1,330-1,350ft) for an overall elevation change of 249ft within the urban watershed. The most densely-populated region is the area confined by the intersections of Olympic Drive and Old Highway 53, Old Highway 53 and Lakeshore Drive, and Lakeshore Drive and Olympic Avenue. The Northeastern side of the confined region is composed of a grid structure while the sections closest to Clear Lake are composed of winding roads and larger parcels. The densely populated grid structure drains south through a series of culverts until it reaches Mullen Avenue where is changes directions (southwest) until it drains into Clear Lake. CL1 is located at the bottom of Mullen Avenue. The closest address is 14460 Lakeshore Drive, Clearlake, CA 95422. CL1 is representative for the City of Clearlake because it follows the path of least resistance for the densely-populated grid section and discharges directly into Clear Lake.
Figure 4: Map showing the representative sample site for urban runoff in the City of Clearlake.
This section describes the urban catchment areas and representative monitoring locations for the regions in the MS4 regulated under Lake County. The urban systems subject to TMDL requirements are Clearlake Oaks, Clearlake Riviera, Kelseyville, Lucerne, Nice, North Lakeport, Soda Bay, and Upper Lake. Lower Lake is not subject to current TMDL requirements because, according to the Tetra Tech report forming the TMDL basis, Lower Lake drains into Cache Creek. However, the co-permittees included Lower Lake in the TMDL monitoring program because it is a significant urban center in Lake County. Hidden Valley Lake and Middletown are covered under the MS4 but are not subject to TMDL requirements. Catchment basin descriptions for Hidden Valley Lake and Middletown are discussed in the Supplemental Water Quality Monitoring Program section.

Clearlake Oaks

CO1 is the representative sample site for Clearlake Oaks (see figure 5). Clearlake Oaks is entirely within the HUC 180201160308 (HUC 308) watershed boundary. This region of HUC 308 spans a gradual slope with the highest points in the northernmost points of the urban area and the lowest points near Clear Lake. Clearlake Oaks contributes the least amount of runoff into Clear Lake as compared to other catchment basins addressed in this plan. Most of the drainage occurs on the northeastern side of the lake mostly due to the Mendocino National Forest and the many tributaries that feed the lake. Clearlake Oaks is characterized by a region with little natural drainage; the only significant tributary is Schindler Creek that bisects the most populated area of Clearlake Oaks.

The outfall with the lowest elevation that can be representative of urban runoff is CO1 located near 510 Schindler St, Clearlake Oaks, CA 95423. Clearlake Oaks is unique in that its most densely-populated region is structured in a marina-like setting where a majority of the population has waterfront property. The community layout is a tree-branching system where streets with waterfront property on both sides branch from a landlocked region forming a labyrinth of peninsulas. Storm water should not be monitored on the peninsulas because the water will only represent a small section of the community.

The landlocked region just above the marina-like community is also densely-populated and Schindler Creek runs through the middle of the urban center. The highest elevation in the landlocked region is at the top of Schindler Street at 1,351ft. CO1 is at the end of Schindler Street; water that drains from CO1 discharges into Schindler Creek. CO1 is representative for Clearlake Oaks because it passes through a densely-populated region and discharges directly into a tributary of Clear Lake.
Figure 5: Map showing the representative sample site for urban runoff in Clearlake Oaks.
Clearlake Riviera

CR1 is the representative sample site for Clearlake Riviera (see figure 6). Clearlake Riviera is mostly within the HUC 180201160305 (HUC 305) watershed boundary, with the southwest corner located in HUC 180201160301 (HUC 301). HUC 301 and HUC 305 meet at a high point in the landscape (2,000ft); HUC 301 drains away from Clear Lake toward Ely Flat and HUC 305 drains towards Clear Lake. HUC 305 has steep slopes with the highest points in the southwestern points of the urban area (2,000ft) and the lowest points near Clear Lake (1,400-1,600ft).

The outfall with the lowest elevation that can be representative of urban runoff is CR1 located the intersection of Sequoia Road and Cascade Way (1,422ft). There are 11 outfalls that drain into Clear Lake that range from 1,422-1700ft, However, there is a dip in the landscape at the intersection of Point Lakeview Road and Hawain Road where storm water accumulates. Several grassy areas were constructed to handle the stormwater in this area. As a result, many of the outfalls northeast of this intersection only represent a small portion of the urbanized area since there is an interruption of overland flow.

There are two main roads in Clearlake Riviera, Soda Bay Road, and Point Lakeview Road. Since most of the drainage for Point Lakeview Road drains into grassy areas, the representative monitoring location should represent runoff from the urban areas around Soda Bay Road. In addition, several of the most densely populated regions have connector outfalls that lead to CR1. CR1 is representative for urban runoff in Clearlake Riviera because it is likely to capture urban runoff from stormwater from urban runoff on Soda Bay Road and is the lowest point before urban storm water discharges into Clear Lake.
Figure 6: Map showing the representative sample site for urban runoff in Clearlake Riviera.
Kelseyville

K1 is the representative sample site for Kelseyville (see figure 7). Kelseyville is west of Mt. Konocti. Roughly two thirds of Kelseyville is within the HUC 180201160303 (HUC 303) watershed boundary, with the eastern one third of the region in HUC 180201160302 (HUC 302). The representative sample location is in HUC 303 because the most densely-populated region of Kelseyville is in HUC 303, it encompasses the majority of Kelseyville, and it has a defined drainage terminus into Clear Lake. HUC 302 has a wider drainage area with a significant amount of rural land before it reaches the lake, which means sediments are likely to settle out before discharge into the lake. Both Cobb Creek and Kelsey Creek run through the urban areas of Kelseyville; both creeks are significant tributaries to Clear Lake. Cobb Creek is located in HUC 302 and Kelsey Creek is located in HUC 303. Kelsey Creek contributes more sediment to Clear Lake than Cobb Creek because of the distinct narrow terminus of HUC 303 into the Lake. HUC 302, which encompasses the urban portion of Cobb Creek, has a larger, less distinctly sharp drainage basin. K1 is located at the outfall closest to 5185 Gunn St, Kelseyville, CA 95451. The catchment flow from the most densely-populated area of Kelseyville and discharges directly into Kelsey Creek.

Figure 7: Map showing the representative sample site for urban runoff in Kelseyville.
Lower Lake

LL1 is the representative sample site for Lower Lake (see figure 8). The western side of Lower Lake is in the HUC180201160602 (HUC 602) watershed and the eastern side of Lower Lake is in the HUC180201160601 (HUC 601) watershed. Both HUC 601 and 602 drain into Cache Creek, the only outfall for Clear Lake. A significant portion of the urbanized area is located in HUC 601; however, it is primarily residential and there is an abundance of vegetative buffer land that surround Copsey Creek before it drains into Cache Creek. The urban areas in HUC 602, however, is a mix of residential and commercial and has noticeably less vegetative buffer land protecting the Seigler Canyon Creek before it drains in Cache Creek. Therefore, LL1 is located in HUC 602.

Seigler Canyon Creek travels north through the urban area of Lower Lake until it discharges into Cache Creek. The southernmost region of the urban area that influences LL1 is located at the intersection of Main Street and Lake Street (1,377ft). LL1 is located at the outfall on Jessie Street (the closest address is 9585 Lake St, Lower Lake, CA 95457) at 1,357ft. LL1 is representative for Lower Lake because it will capture storm water from the most densely-populated urban area and discharges into a tributary of Cache Creek.

Figure 8: Map showing the representative sample site for urban runoff in Lower Lake.
Lucerne

L1 is the representative sample site for Lucerne (see figure 9). Lucerne is entirely within the HUC 180201160307 (HUC 307) watershed boundary. This region of HUC 307 spans a gradual slope with the highest points in the Mendocino National Forest and the lowest points near Clear Lake. The Mendocino National Forest mountain range located northeast of Lucerne creates several drainage points that span the shoreline of Lucerne. The point of highest elevation in the urbanized area is the peak of Foothill Drive (the closest address is 4240 Foothill Drive, Lucerne, CA) at 1,368ft. Outfalls that drain into Clear Lake range from 1,324-1,360ft for an overall elevation change of 61ft throughout the urban area.

There are 40 outfalls in Lucerne that terminate in Clear Lake. Each outfall’s elevation was mapped using the USGS elevation map (TNM Elevation, 2020) to determine the range of outfall elevations. Elevations ranged from 1,324-1,360 feet for an overall difference of 35ft. The outfall with the lowest elevation is likely to be the most representative of storm water quality due to a higher volume and velocity of storm water passing through the points during storm events and additional flow from other urban areas (streets, roads) terminating at lower elevations. However, outfalls with the lowest elevations in Lucerne are located in the northeastern reaches of Lucerne which are less-populated and cannot be representative of urban runoff.

The outfall with the lowest elevation that can be representative of urban runoff is L1 located nearest 6044 State Hwy 20, Lucerne, CA 95458. L1 has an elevation of 1,333ft and is below the highest point of Lucerne (4240 Foothill Drive). Lucerne’s main urban center is composed of grid streets numbered from 1st to 17th. The grid has 16 numbered streets perpendicular to Clear Lake and two streets that mark the start and end of each numbered street (Highway 20 and Country Club Drive). L1 is at the end of 3rd avenue, where drainage from the highest point in Lucerne is likely to travel. The second highest peak in Lucene is at the top of Highland Avenue at 1,351ft. Highland Avenue starts above 1st Avenue and terminates at 5th Avenue. Storm water that flows from this point travels south down the impervious street until it reaches 3rd Avenue where it will change direction (southeast) and drain into Clear Lake. L1 is representative for Lucerne because it is likely to capture storm water from the two highest points in the system that run through urban areas.
Figure 9: Map showing the representative sample site for urban runoff in Lucerne.
North Lakeport

NL1 is the representative sample site for North Lakeport (see figure 10). North Lakeport is entirely within the HUC 180201160306 (HUC 306) watershed boundary. HUC 306 spans a relatively flat terrain and does not have a single drainage terminus point. Single drainage terminus points in watershed boundaries are typical of watersheds characterized by sharp changes in elevation. Since there are only small changes in elevation throughout the HUC 306 watershed boundary, drainage is evenly distributed throughout the catchment with an ultimate discharge into Clear Lake that spans the entire shoreline of North Lakeport.

There are 34 outfalls in North Lakeport that terminate in Clear Lake. Each outfall’s elevation was mapped using the USGS elevation map (TNM Elevation, 2020) to determine the range of outfall elevations. Elevations ranged from 1,329-1,336 feet for an overall difference of 7ft. The outfall with the lowest elevation is likely to be the most representative of storm water quality due to a higher volume and velocity of storm water passing through the points during storm events and additional flow from other urban areas (streets, roads) terminating at lower elevations. However, outfalls with the lowest elevations in North Lakeport are located in rural areas composed of large parcels with open natural chaparral lands. The overall goal of the urban water quality monitoring program is to measure the phosphorus output from urban areas, so the outfalls with the lowest elevation cannot be considered for representative monitoring.

The outfall with the lowest elevation that can be representative of urban runoff is NL1 located at 4252 Lakeshore Blvd, Lakeport, CA 95453. This location has an elevation of 1,331ft and is directly below the most densely-populated area of North Lakeport. The outfall immediately north of NL1 has an elevation of 1,334ft and the outfall immediately south of NL1 has an elevation of 1,335ft. Therefore, the direction of flow from the outfalls north and south of NL1 will flow toward NL1, picking up representative storm water from urban runoff.
Figure 10: Map showing the representative sample site for urban runoff in North Lakeport.
Nice

N1 is the representative sample site for Nice (see figure 11). Nice is entirely within the HUC 180201160307 (HUC 307) watershed boundary. HUC 307 spans a steep terrain but does not have a single drainage terminus point within the watershed. Rather, the Mendocino National Forest mountain range located directly north of Nice creates several drainage points that span the shoreline of Nice. The northernmost region of Nice is 1,940ft above sea level and the outfalls that drain into Clear Lake range from 1,330-1,347ft for an overall elevation change of 610ft throughout the urban area.

There are 19 outfalls in Nice that terminate in Clear Lake. Each outfall’s elevation was mapped using the USGS elevation map (TNM Elevation, 2020) to determine the range of outfall elevations. Elevations ranged from 1,330-1,349 feet for an overall difference of 19.4ft. The outfall with the lowest elevation is likely to be the most representative of storm water quality due to a higher volume and velocity of storm water passing through the points during storm events and additional flow from other urban areas (streets, roads) terminating at lower elevations. However, similarly to the catchment description for North Lakeport, outfalls with the lowest elevations in Nice are located in the westernmost reaches of Nice which are primarily rural areas composed of large parcels of natural chaparral lands. The goal of the urban water quality monitoring program is to measure the phosphorus output from urban areas, therefore, the outfalls with the lowest elevation cannot be considered for representative monitoring in Nice.

The outfall with the lowest elevation that can be representative of urban runoff is N1 located at 2715 Lakeshore Blvd, Upper Lake, CA. N1 has an elevation of 1,331ft and is directly below the most densely-populated area of Nice. Lakeview Drive is a major road that runs from the northernmost part of Nice directly through Highway 20 where the road name changes to Collier Drive. Collier Drive terminates at the shore of Clear Lake where it meets an outfall (N1) that drains into Clear Lake. Lakeview Drive traverses densely-populated regions and Collier Drive traverses less-populated regions. Lakeview Drive is the longest stretch of impermeable surface that runs through Nice and undergoes the most dramatic change in elevation. Storm water flows downhill over impervious surfaces and terminates at N1. Of the locations considered for representative monitoring, N1 follows the path of least resistance throughout the system and is therefore representative for storm water monitoring.
Figure 11: Map showing the representative sample site for urban runoff in Nice.
Soda Bay

SB1 is the representative sample site for Soda Bay (see figure 12). Soda Bay is entirely within the HUC 180201160305 (HUC 305) watershed boundary. HUC 305 spans a steep terrain and includes Mt. Konocti. Mt. Konocti is a volcano with 5 peaks composed of porous volcanic soil. It towers over Clear Lake but has negligible drainage due to the porosity of the soil. Soda Bay sits at the base of Mt. Konocti. There are no tributaries that run through Soda Bay, but the community extends out to the shoreline of Clear Lake.

There are seven outfalls that drain into Clear Lake, however, the outfall most likely to receive runoff from the urban area is SB1. The most densely-populated region of Soda Bay sits above the shoreline with drainage spread out along the downhill gradients. The northernmost point of the elevated urban area is nearest the intersection of Soda Bay Road and Aqua Vista Way. Overland flow the urban area will collect and ultimately drain into SB1 due to the interconnected outfalls that run from the urban area and collect at SB1 before discharging into Clear Lake.

Figure 12: Map showing the representative sample site for urban runoff in Soda Bay.
Upper Lake

UL1 is the representative sample site for Upper Lake (see Figure 13). It is located at the end of a storm water outfall that terminates in Clover Creek. Clover Creeks runs through the urban area of Upper Lake and terminates in Middle Creek – the second largest tributary into Clear Lake. Of the several locations considered for representative monitoring, UL1 has the lowest elevation (1,137 ft), is directly below the most densely-populated area Upper Lake and is near the terminus of the drainage basin.

The Upper Lake region is characterized by steep slopes that drain into several tributaries that feed Clear Lake. UL1 has the lowest elevation of all storm water outfalls in Upper Lake that are influenced by urban runoff. The northern end of urban development in Upper Lake has an average elevation of 1,350 ft. The eastern and western ends of urban development are 1,344 ft and 1,343 ft, respectively. The southern end (where UL1 is located) is the lowest at 1,337 ft. A representative sample location is one that can catch the confluence of urban runoff, which is often characterized by the area of lowest elevation. Upper Lake has several drainage locations into Clover Creek, however, UL1 has the lowest elevation and can account for the densely-populated region directly above the sample point.

UL1 is located at the terminus of the drainage basin HUC 180201160203 (HUC 203) which immediately flows into the terminus of drainage basin HUC 180201160204 (HUC 204). Sampling locations close to the terminus of a drainage basin are the most representative of water quality. The terminus of a drainage basin is where overland flow (water that flows on the surface due to impervious surfaces or soil saturation) will converge due to slope, elevation, rainfall intensity, and specific soil capacity. HUC 203 converges into the terminus of HUC 204, making UL1 an ideal location for representative sampling.
Hidden Valley Lake

HVL1 is the representative sample site for Hidden Valley Lake (see figure 13). Hidden Valley Lake is entirely within the HUC 180201620307 (HUC 20307) watershed boundary. HUC 20307 drains into Putah Creek. The northernmost region of Hidden Valley Lake is 2,011ft and the lowest elevation is at 947ft for an overall change in elevation of 1,064ft. Employees at the Hidden Valley Community Service District identified HVL1 as the lowest point in the urban system where the urban drainage flows into a sedimentation basin before it’s discharged into Putah creek. If representative monitoring is required for Hidden Valley Lake, samples will be taken from HVL1 at the 72” gate valve before water is discharged into the sedimentation basin.

Figure 13: Map showing the representative sample site for urban runoff in Upper Lake.
Middletown

M1 is the representative sampling location for Middletown (see Figure #). Middletown is mostly within HUC 180201620302 (HUC 20302) with the southernmost portion located in HUC 180201620301 (HUC 20301). The most densely-populated urban area of Middletown drains into Saint Helena Creek from M1 located in HUC 20301.
ORDER TO SUBMIT TECHNICAL AND MONITORING REPORTS PURSUANT TO CALIFORNIA WATER CODE SECTIONS 13267 AND 13383

You are legally obligated to respond to this Order. Please read this Order carefully.

The Central Valley Regional Water Quality Control Board (“Central Valley Water Board”) finds the following:

1. **Geographic Scope.** Central Valley Water Board Resolution R5-2017-0057 established a Pyrethroid Pesticides Control Program (“Basin Plan Amendment”) to control the discharges of pyrethroid pesticide discharges throughout the Sacramento and San Joaquin River Basins to protect aquatic life beneficial uses.

2. **Responsible Parties.** The discharges to Waters of the United States from Municipal Separate Storm Sewer Systems (MS4s) have been found by the Central Valley Water Board to be a source of pyrethroid pesticides to surface waters within the Sacramento and San Joaquin River Basins. Resolution R5-2017-0057 established a conditional prohibition for the discharges of pyrethroid pesticides to waters with aquatic life beneficial uses in the Sacramento and San Joaquin River Basins, established monitoring requirements for MS4s to conduct baseline monitoring, and specified that the Executive Officer may issue 13267 and/or 13383 orders to meet these monitoring requirements. The County of Lake is a permitted MS4 discharger within the geographic scope of the Pyrethroids Control Program.

The Basin Plan Amendment Staff Report supporting the adoption of Resolution R5-2017-0057 summarized existing pyrethroid concentration data for the Sacramento and San Joaquin River Basins. These data showed pyrethroids concentrations in urban streams frequently exceeded water quality standards. These data also showed that pyrethroid concentrations in urban storm drain discharges frequently exceeded the pyrethroid prohibition triggers established in the Basin Plan. As described in that Basin...
Plan Amendment Staff Report, over 50% of samples collected from urban streams contained pyrethroid pesticide concentrations exceeding the evaluation guidelines used to interpret water quality objectives. Data also showed that municipal stormwater was toxic to the test organism *Hyalella azteca* in over 50% of the samples collected from urban storm drain discharges following storm events. In those samples that showed toxicity, nearly all had pyrethroid pesticide concentrations that could account for the toxicity observed (Fojut et al., 2017, Sections 2.3, 5.6, and Appendix B).

3. **Beneficial Uses.** The Central Valley Water Board has found that freshwater habitat beneficial uses are the most sensitive to impacts from pyrethroid pesticide discharges. The Central Valley Water Board’s operative Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) designates warm/cold freshwater habitat for surface waters throughout the Sacramento and San Joaquin River basins, including those surface water to which the County of Lake discharges.

4. **Regulatory Authority.** This Order is issued pursuant to Water Code section 13267, subdivision (a), which broadly authorizes the Central Valley Water Board to investigate the quality of any waters of the State within this region. Pursuant to Water Code section 13267, subdivision (b)(1), the Central Valley Water Board may require a person who discharged, discharges, is suspected of having discharged or discharging, or proposes to discharge waste to submit technical or monitoring reports. Waste is broadly defined under Water Code section 13050(d) and includes “sewage and any and all other water substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin.” In requiring these reports, the Central Valley Water Board must provide the responsible party a written explanation with regard to the need for the report and shall identify the evidence that supports requiring the responsible party to provide the report. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom. Additionally, Water Code section 13225, subdivision (c) authorizes the Central Valley Water Board to “require as necessary any state or local agency to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water, provided that the burden, including costs, of such reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom.”

Applicable findings of this Order and Resolution R5-2017-0057 establish that the County of Lake is appropriately named as a Responsible Party and required to comply with the provisions of this Order. Based on available information, it is reasonable to suspect that discharges of waste, including pyrethroid pesticides, originate from MS4 systems owned and/or controlled by the County of Lake.

5. **Burden of Reports.** The burdens, including costs, of complying with this Order are reasonable in relation to the important needs for information to determine if pyrethroid pesticides are impacting beneficial uses, to assess attainment of the pyrethroids conditional prohibition, and to inform assessments of progress in reducing pyrethroid concentrations and toxicity. In adopting Resolution R5-2017-0057, the Central Valley Water Board found that the costs of implementing the Pyrethroid
Pesticides Control Program, which included the costs of required monitoring, are reasonable relative to the water quality benefits to be derived from implementing the Pyrethroid Pesticides Control Program. The estimated costs for MS4 monitoring and reporting is approximately $43,000 (Fujita et al., 2017, Table 9-1) for the scope of monitoring and reporting required by this Order. The baseline monitoring and Pyrethroid Management Plans required by this Order will reduce pyrethroid pesticide concentrations and their impact to beneficial uses and inform future actions to reduce pyrethroid pesticide concentrations.

As specified in Resolution R5-2017-0057, the required information may come from the dischargers' monitoring efforts; monitoring programs conducted by state or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. Also as specified in Resolution R5-2017-0057 and Provision 2.D of this Order, with Executive Officer approval, representative monitoring programs, including coordinated regional or statewide monitoring programs, may be used to meet the monitoring requirements.

6. **Liability for Noncompliance.** Pursuant to Water Code section 13267, any person failing or refusing to submit a technical or monitoring report required under section 13267, subdivision (b), or falsifying any information therein, is guilty of a misdemeanor and may be subject to an administrative civil liability of up to $1,000 per day for each day in which the violation occurs.

7. **California Environmental Quality Act.** The issuance of this Order, which involves collection of information and protection of the environment, is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) (Public Res. Code, § 21000 et seq.), in accordance with the CEQA Guidelines. (Cal. Code Regs., tit. 14, §§ 15306, 15308.) This Order is further exempt because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15061, subd. (b)(3).)

8. **Delegated Authority.** This Order is issued under authority delegated to the Executive Officer pursuant to Resolution R5-2018-0057 and Water Code section 13223.

**IT IS HEREBY ORDERED** that, pursuant to Water Code Sections 13267 and 13383 and the above findings, County of Lake (hereafter “Discharger”) shall submit the following technical and monitoring reports, and do so in accordance with the following provisions:

1. **Monitoring Plan or Commitment to Develop a Pyrethroid Management Plan**

   As described in Finding 2, municipal stormwater is known to contain pyrethroids at levels exceeding the prohibition triggers established in the Basin Plan. Therefore, if Discharger acknowledges that the existing data are assumed to be representative of their discharge and develops and submits a pyrethroids management plan to the Board by 19 August 2021, they may forego the baseline monitoring requirements of this Order.
A. **No later than 31 August 2020** Discharger shall submit, in a letter signed by an authorized representative of the discharger, either:

1) A statement of intent to conduct baseline monitoring in compliance with the specifications of this Order.

**OR**

2) An acknowledgement that the existing data, such as the data used to characterize MS4 concentrations in the Pyrethroids Basin Plan Amendment Staff Report (Fojut et al., 2017, Sections 2.3, 5.6, and Appendix B), and described in Finding 2, are assumed to be representative of its discharge and a statement of intent to submit a Pyrethroids Management Plan to the Central Valley Water Board per the requirements in Item 3 by the deadline required in item 3(A).

2. **Baseline Monitoring Plan Requirements**

A. If Discharger selects the option to conduct baseline monitoring, by **28 February 2021**, Discharger shall submit a complete draft baseline monitoring plan. All baseline monitoring shall be completed by **21 June 2022**.

B. Baseline monitoring shall be designed to collect information necessary to:

1) Determine through representative receiving water monitoring whether discharges from Discharger are exceeding Acute and/or Chronic Pyrethroid Triggers by providing pyrethroid and dissolved and particulate organic carbon concentration data; and

2) Determine whether pyrethroid pesticide discharges from Discharger are causing or contributing to exceedances of the narrative water quality objective for toxicity in surface waters or bed sediments by providing *Hyalitella azteca* toxicity test data.

C. The baseline monitoring plan shall include a Quality Assurance Project Plan (QAPP), in accordance with the quality assurance/quality control (QA/QC) and other protocols established by the Surface Water Ambient Monitoring Program (SWAMP). Unless otherwise specified by this Order, field testing, sample collection, preservation, laboratory testing, including quality control procedures and all record keeping shall comply with the most current version of the SWAMP Quality Assurance Program Plan (SWRCB, 2017) which is available at:

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1 If an extension is necessary due to lack of qualifying storm events, as specified in Table 1, the due date for monitoring completion shall be extended as specified in Table 1.
Discharger shall use Environmental Laboratory Accreditation Program (ELAP)-accredited laboratories and methods for chemistry and toxicity testing. ELAP-accredited methods are acceptable for pyrethroid chemical analysis provided that the method meets the analytical capability described in Table 1. A current list of ELAP approved laboratories and points of contact can be found on the Central Valley Water Board’s website, https://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/pyrethroid_tmdl_bpa/index.html

D. With Executive Officer approval, the baseline monitoring requirements may be met by submittal of a report, including a compilation and interpretation of representative monitoring data (which can include data from representative monitoring programs, including coordinated regional or statewide monitoring programs), demonstrating that the required information has been collected and is sufficient to make the required determinations. Such a demonstration may be made by the provision of data and information similar to that which would be generated by following the specified receiving water monitoring requirements below, or otherwise demonstrating that the determinations in 2B above, assessment of attainment of the pyrethroid trigger limits and assessment of potential toxicity to *Hyalella azteca* in receiving waters, can be made with the data and information provided.

E. Discharger may, in a Baseline Monitoring Plan, propose a sampling frequency that differs from that described herein if it can be demonstrated to meet the goals of the baseline monitoring described above and if it is approved by the Executive Officer. The Baseline Monitoring Plan shall be approved by the Executive Officer before the data can be used to meet the monitoring requirements.

F. Monitoring Locations

1) The Discharger shall establish a monitoring location to collect water samples from either a receiving water site downstream of the MS4 discharge; or from the MS4 discharge itself. The monitoring location shall be proposed in the Baseline Monitoring Plan for approval by the Executive Officer.

G. Pyrethroid Chemistry and Organic Carbon Monitoring Requirements

1) The Discharger shall monitor receiving water or MS4 discharge as shown in Table 1.
**Table 1. Receiving Water or MS4 Discharge Monitoring**

<table>
<thead>
<tr>
<th>Chemicala</th>
<th>Units</th>
<th>Sample Type</th>
<th>Minimum Sampling Frequencye</th>
<th>Minimum QA/QC Sampling Frequencyd</th>
<th>Minimum Reporting Levelb,c (ng/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifenthrin</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>1.3</td>
</tr>
<tr>
<td>Cyfluthrin</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>1.3</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>1.7</td>
</tr>
<tr>
<td>Esfenvalerate</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>3.3</td>
</tr>
<tr>
<td>Lambda- cyhalothrin</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>1.2</td>
</tr>
<tr>
<td>Permethrin (total)</td>
<td>ng/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>10</td>
</tr>
<tr>
<td>Total Organic Carbon (TOC)</td>
<td>mg/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>--</td>
</tr>
<tr>
<td>Dissolved Organic Carbon (DOC)</td>
<td>mg/L</td>
<td>Grab</td>
<td>4/year</td>
<td>1/year</td>
<td>--</td>
</tr>
</tbody>
</table>

a Concentrations are total analyte concentrations, including all isomers.
b Numbers reported to two significant figures.
c Analytical Methods shall not exceed the minimum reporting levels specified in Table 1. Minimum reporting levels calculated from prohibition trigger limits established by Central Valley Water Board Resolution R5-2017-0057.
d Minimum number of QA/QC samples collected shall be 20% of total water samples collected.
e Samples shall be collected for three qualifying wet weather events2 (i.e., post first flush3, post mid-winter4 wet weather event, post spring runoff5 event) and one dry weather6 event. If, during the time period for a wet weather event, a qualifying wet weather event does not occur, additional storms shall be sampled during the time period for the next wet weather event. If there are not three qualifying wet weather by the end of the time period for wet weather sampling during the first year of sampling, the monitoring shall be extended until three qualifying wet weather events occur. If the monitoring is extended, the due date for the Baseline Monitoring Report shall be extended until 90 days following the final qualifying wet weather event.

H. Water Column and Sediment Toxicity Monitoring Requirements

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2 Qualifying wet weather event is any rain event 0.25-inch in 24-hours.
3 Post first flush timeframe is within 1 day of the qualifying wet weather event between 1 October and 31 December.
4 Post mid-winter wet weather event is within 1 day of a qualifying wet weather event between 1 January and 19 March.
5 Post spring runoff event is within 1 day of a qualifying wet weather event between 20 March and 20 June.
6 A dry weather event is any day between 21 June and 30 September that is preceded by 7-days of no measurable (i.e., <0.1 inches) of rain.
1. **Water Column Toxicity Testing.** Discharger shall meet the following acute toxicity testing requirements:

   a) *Monitoring Frequency* – Discharger shall perform water column toxicity testing four times per year to coincide with Table 1 sampling.

   b) *Sampling Types* – Discharger shall use static renewal testing. The samples shall be grab samples and be taken at the established monitoring location in 2.C.1) above and within 24 hours of the water sampling event.

   c) *Test Species and Duration* – The test species shall consist of *Hyalella azteca* and the duration of the test shall be 96 hours.

   d) *Methods* – The water column toxicity testing samples shall be analyzed using EPA method EPA-821-R-02-012 (Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, USEPA, October 2002, or most recent edition) Except as specified in this order, water column toxicity testing shall follow the measurement quality objectives provided in the Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Program Plan (SWRCB, 2020). When feasible, Discharger shall use the Southern California Coastal Water Research Project (SCCWRP) guidance (Schiff and Greenstein, 2016) on test organism age and size for *Hyalella azteca*.

   For consistency with EPA Method EPA-821-R-02-012 and ELAP accreditation, *Hyalella azteca* water column toxicity testing for baseline monitoring must be performed at either 20 or 25 degrees Celsius. The test temperature should be the temperature that is closest to the daily average temperature of the water body at the monitoring location on the day the sample is collected. Due to temperature conditions expected during most monitoring events, daily average water temperatures can be assumed to be closer to 20 degrees Celsius. Therefore, this test shall be performed at 20 degrees Celsius, with the following exception: If the Discharger can document that, on the sampling date, the daily average water temperature of the water body at the monitoring location was 22.5 degrees Celsius or higher, the test shall be performed at 25 degrees Celsius.

   e) *Test Failure* – If a toxicity test does not meet all test acceptability criteria as specified in the test method, Discharger must-resample and initiate re-testing as soon as possible, not to exceed 14 days following notification of test failure by the laboratory.

2. **Sediment Toxicity Testing.** Discharger shall meet the following sediment toxicity testing requirements:
a) **Monitoring Frequency** – Discharger shall perform sediment toxicity testing four times per year to coincide with Table 1 sampling.

b) **Sampling Types** – Discharger shall identify and collect sediment samples in a depositional area in receiving waters downstream of the MS4 discharge.

c) **Test Species and duration** – The test species shall consist of *Hyalobella azteca* and the duration shall be a 10-day test.

d) **Methods** – The sediment toxicity testing samples shall be analyzed using EPA method EPA-600-R-99-064 (Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates, USEPA, 2000, or most recent edition).

e) **Test Failure** – If a toxicity test does not meet all test acceptability criteria, as specified in the test method, Discharger must-resample and initiate re-testing as soon as possible, not to exceed 14 days following notification of test failure by the laboratory.

I. **Baseline Monitoring Report**

1) If Discharger selects the option to conduct baseline monitoring, Discharger shall submit a Baseline Monitoring Report that:

   a) Summarizes the pyrethroid and toxicity monitoring results;

   b) Assesses the compliance of the discharge with the conditional prohibition triggers in the Basin Plan established by Resolution R5-2017-0057;

   c) Summarizes toxicity of water and sediment samples to the test organism *Hyalobella Azteca*; and

   d) Summarizes any other pyrethroid monitoring data collected by Discharger during the above period.

2) The Baseline Monitoring Report shall include all the required pyrethroid chemistry, dissolved and particulate organic carbon data and toxicity test results and documentation of laboratory analysis (including QA/QC data) and chain of custody documents.

3) Discharger shall submit the Baseline Monitoring Report by **19 September 2022** to the Central Valley Water Board.

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7 If an extension is necessary due to lack of qualifying storm events, as specified in Table 1, the due date for submittal of the report shall be extended as specified in Table 1.
3. Pyrethroid Management Plan

A. If Discharger selected the option to submit an acknowledgement that the existing data are representative of their discharge and a statement of intent to submit a Pyrethroids Management Plan to the Central Valley Water Board, per the requirements established in the Basin Plan by Resolution R5-2017-0057, Discharger shall submit a Pyrethroid Management Plan by **19 August 2021**.

B. If Discharger selected the option to conduct baseline monitoring and the baseline Pyrethroid Chemistry and Organic Carbon Monitoring results reveal an exceedance of any prohibition trigger, Discharger shall develop and submit a Pyrethroid Management Plan per the requirements described in Resolution R5-2017-0057 to the Central Valley Water Board within **one year from the date that an exceedance is identified** by either the Discharger or Central Valley Water Board staff.

C. The pyrethroid management plan may be submitted to the Board in an update of Discharger’s existing storm water management plan (SWMP).

D. The pyrethroid management plan must identify a set of management practices that, taken as a whole, may be reasonably expected to effectively reduce pyrethroid levels in their discharges, to the maximum extent practicable, and to consider whether there are potential water quality concerns with replacement insecticide products.

E. The management practices listed in this Provision shall be considered for inclusion in Discharger’s pyrethroid management plan. The pyrethroid management plan may include any of the practices listed this Provision or may identify others that are not included here, but must provide justification to the Board regarding their decision whether to select or not select each practice listed in this Provision.

Some of the practices in the pyrethroid management plan may be accomplished by participation in organizations such as California Stormwater Quality Association (CASQA), which coordinates with the California Department of Pesticide Regulation (CDPR) and other organizations taking actions to protect water quality from the use of pesticides in the urban environment. Other practices may also be proposed. If the State Water Resources Control Board (SWRCB) establishes a statewide water quality control plan that requires management practices for the control of urban pesticide discharges, compliance with those requirements shall be deemed compliance with this Provision.
1) Management Practices to be Considered by Dischargers for Inclusion in a Pyrethroids Management Plan:

i. Education and outreach activities

1. Undertake targeted outreach programs to encourage communities within a discharger’s jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing efforts on those most likely to use pesticides that threaten water quality, potentially by working with CDPR, County Agricultural Commissioners, and the University of California Statewide Integrated Pest Management Program, or other entities as appropriate.

2. Make available point-of-purchase outreach materials to pesticide retailer(s) in or near the Discharger’s jurisdiction. These materials shall provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control.

3. Conduct outreach to Discharger’s residents and businesses who may hire structural pest control and landscape professionals that contains messages that (a) explain the links between pesticide usage and water quality; and (b) provides information about structural pest control IPM certification programs and IPM for landscape professionals.

4. Encourage public and private management practices (e.g., landscape design, irrigation management, etc.) that minimize pesticide runoff.

ii. Pesticide pollution prevention activities

1. Reduce reliance on pyrethroids and other pesticides that threaten water quality by adopting and implementing policies or procedures that minimize the use of pesticides that threaten water quality in the discharger’s operations and on the Discharger’s property.

2. Develop and implement an Integrated Pest Management policy that:

   a) Is consistent with IPM as defined by the University of California Statewide IPM Program (UC-IPM) or the California Structural Pest Control Board definition.
   b) Applies to all Discharger staff who conduct or contract for pest management and to pest management vendors under contract to the Discharger.
c) Assigns responsibilities to a designated staff position and/or department to coordinate Discharger activities and ensure that the IPM policy is implemented.

iii. Support of Pollution Prevention through the Pesticide Regulatory Process

1. Track USEPA and CDPR pesticide evaluation and registration activities as they relate to surface water quality and encourage these agencies to accommodate urban water quality concerns within their pesticide registration processes. This may include assembling and submitting available information (such as monitoring data) to USEPA and CDPR during public comment periods to assist in their pesticide evaluation and registration activities. This management practice would be implemented most effectively through a cooperative regional or statewide approach.

4. Certification of Reports

All technical reports submitted under this Order shall be accompanied by a cover letter, signed by an authorized representative of Discharger with the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

5. Submittal Process

All documents submitted to comply with this Order shall be submitted into the Storm Water Multiple Application Tracking System (SMARTS) database. The monitoring data must be in an electronic format where the data can be manipulated.

6. Requesting Time Extensions

An extension of time to submit the required technical and monitoring reports may be requested. The request must be in writing, supported by good cause, and submitted before expiration of the above deadline. Any extension of the above deadline must be confirmed in writing by the Central Valley Water Board or designated delegee.
7. **Duty to Comply**

Failure to furnish any of the required reports, or the submittal of substantially incomplete reports or false information, is a misdemeanor, and may result in additional enforcement actions being taken against you, including issuance of an Administrative Civil Liability (ACL) Complaint for liability in an amount not to exceed one thousand dollars ($1,000) for each day in which the violation occurs pursuant to Water Code section 13268. You are hereby notified that the Assistant Executive Officer reserves the right to assess administrative civil liability starting from the date the Assistant Executive Officer finds the violation first occurred. The Central Valley Water Board reserves its right to take any enforcement action authorized by law for violations of this Order.

8. **Filing Petitions**

Persons aggrieved by this Central Valley Water Board action may petition the State Water Resources Control Board (State Water Board) for review in accordance with Water Code section 13320, and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5pm on the 30th day after the date of this Order, except that if the 30th day falls on a Saturday, Sunday or State holiday, in which case the petition must be received by the State Water Board by 5pm on the next business day. Laws and regulations applicable to filing petitions are available on the internet (at the address below), and copies will also be provided upon request.


9. **Effective Date**

This Order is effective as of the date set forth below.
If you have any questions regarding this matter, please contact Daniel McClure at (916) 464-4751 or Daniel.Mcclure@waterboards.ca.gov or Sammantha Mello at (916) 464-4603 or Sammantha.Mello@waterboards.ca.gov.

Ordered By:

PATRICK PULUPA
Executive Officer,
Central Valley Water Board

13 July 2020

REFERENCES


